THE OIL WEEKLY

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The Oil Man's Calendar

APR.	
13-15	**Petroleum Industry Electrical Association, Rice Hotel, Houston.**
13-14	**National Petroleum Association, Cleveland, Ohio.**
14-15	**A.P.I., Eastern District, Division of Production, William Penn Hotel, Pittsburgh, Pennsylvania.**
17-21	**American Chemical Society, Dallas, Texas.**
19	**A.P.I., Division of Production, Pacific Coast District, Spring Meeting, Biltmore Hotel, Los Angeles.**
19	**Western Petroleum Refiners Association, Hot Springs, Arkansas.**
28-29	**Sectional-Regional Transportation & Maintenance Meeting, Society of Automotive Engineers, Cleveland, Ohio.**
29-30	**Interstate Oil Compact Commission, Allis Hotel, Wichita, Kansas.**
29-30	**Independent Petroleum Association of America, Executive Committee Meeting, Allis, Hotel, Wichita, Kansas.**
MAY	
9-12	**American Gas Association, Natural Gas Department, New Orleans, La.**
11-13	**Natural Gasoline Association of America, Hotel Tulsa, Tulsa.**
12-14	**National Oil Scouts Association of America, Tulsa, Oklahoma.**
14-21	**International Petroleum Exposition, Tulsa, Oklahoma.**
23-25	**A.P.I., Mid-Year Meeting, Allis and Lassen Hotels, Wichita, Kansas.**
27-28	**Seventh Annual Petroleum & Natural Gas Conference, Penn. State College, Penn. Grade Crude Oil Assn., and Penn. Natural Gas Men's Assn., State College, Pennsylvania.**
JUNE	
4	**Illinois-Indiana Petroleum Association, Sixth Annual Conference, Robinson, Illinois.**

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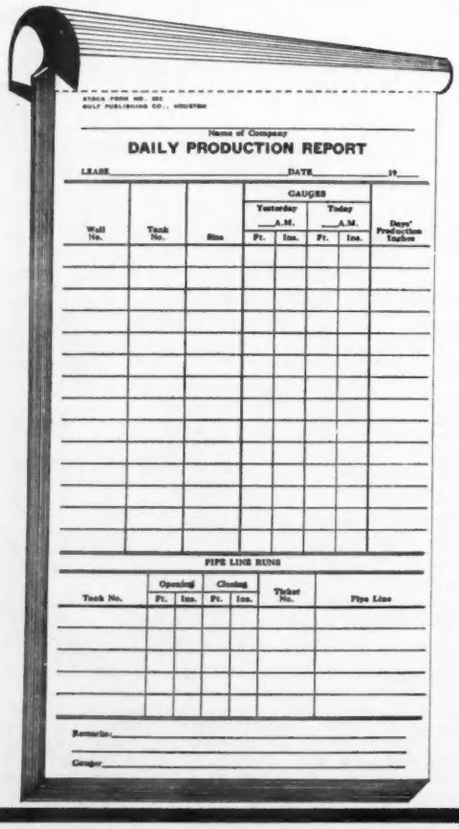

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LOOKING AHEAD

WITH THE EDITOR

Unique warehouse is constructed.
Formula for choking wells . . .
Economy in drilling practices . . .

CONSTRUCTION of large, semi-fireproof warehouses has been a costly item in lease operation. But Dan McGregor, engineer, tells of a new type of oil field warehouse 50 feet wide, 300 feet long and 28 feet high, modeled after an airplane hangar, built recently by a Panhandle operator at a cost of 66 cents per square foot of floor space and 2.9 cents per cubic foot of volume. His illustrated article will be printed in an early issue of THE OIL WEEKLY. *Knowledge of the construction details involved may save you some money, too.*

SOME ailments a doctor can cure by prescribing simple old remedies like castor oil or quinine, knowing at the time they will get the job done. With other more complicated cases where conditions change from time to time, and for which medical lore has laid down no hard and fast curative formula, the doctor must first try this and then try that, keeping his eye constantly on reactions of the patient.

Choking oil wells falls into the latter category. There just is not any hard and fast rule. Experience dictates that best practice is to experiment until best results are obtained in the individual well. An illustrated discussion along these lines appears in an article on well chokes to be published soon.

IF YOU could find a text wherein were indicated the various methods whereby either speed could be increased without added expenditure, or economy be effected without reduction of speed, you would want to read it.

Such a text is in type, and you'll want to read in an early issue what J. Bayliss of British Burmah Petroleum Company has to say constructively on the subject in "Good Drilling Practice."

The changing panorama

DESPITE the continued languishing of business in general, the oil industry is clinging obstinately to its comparatively good position, and moderate cheerfulness among oil men appears to be well justified.

The chief difficulty that the industry has experienced so far in the recession has been the inability to hold gasoline stocks in line with less favorable demand and the resultant unsatisfactory gasoline prices.

But the gasoline market lately has shown some improvement, in response to more moderate refinery output and the exceptionally strict curtailment of crude oil production. And there is some basis for hope that the gasoline prices may improve further, since the gasoline stocks are coming into a better relation to demand.

Crude Oil Markets Steady

The better gasoline market and the continuing strict control of crude oil production naturally are tending, meanwhile, to strengthen the crude oil markets, which were showing some signs of unsteadiness in recent weeks.

Some forecasters are becoming so bold as to venture the prediction that Mid-Continent crude oil prices will hold at present levels the rest of the year.

But in view of less favorable demand for petroleum lately, it does not appear at all certain that the prices actually are assured of remaining unchanged.

If the markets are to remain stable, supply must continue in balance with market demand; and if the unfavorable trends of demand continue, the balance can be maintained only through temperance in producing crude oil and in making refined products.

Crude Control Promotes Stability

The whole market situation currently is being bolstered by the exceptionally tight reins on crude oil production. The output is being held down not only by the relatively low allowables fixed by the state oil conservation authorities but also, in addition, by proration of purchases by pipe lines in some districts of Oklahoma, Kansas, New Mexico, and Pennsylvania. Some of the larger purchasers of the Mid-Continent are buying only around 75 to 90 percent of the allowable production of leases to which they are connected.

Pipe line proration has prevailed for several months, but it has assumed larger proportions in the past few weeks, as purchasers have found it necessary to reduce takings in order to bring them down in line with their market requirements.

The curtailment of production through the state and private proration programs undoubtedly will help to prevent further accumulation of surplus crude and refined products, if not to bring about some reduction of present surpluses of gasoline and other refined products, which represent surplus crude in refined forms.

Actually, crude production lately has been about in balance with current demand, and no material headway has been made yet toward bringing gasoline stocks down in line with the current less favorable trend of consumption.

Exceptionally strict crude control remains, consequently, a prerequisite not only for a stable crude oil market but also for a stable gasoline market.

Oil Helps Sustain General Business

It probably is not a mere coincidence that general business activity in the United States is holding up best in the South Central states, in which much of the petroleum industry's operation is concentrated.

The petroleum industry so far has fared relatively better than many other industries, benefiting by well-

Sun sets on a new discovery in this picture, which shows Standard Oil Company of Texas and Salt Dome Oil Corporation's State 1 in Galveston Bay, Texas. As night approaches it has made history, being the first well to produce in the open waters of the Texas Gulf Coast.

sustained demand for oils and by generally stable markets and prices. Similarly, the petroleum industry has continued to make near normal purchases from industries that supply it with materials and manufactured goods; having gone ahead with heavy drilling programs and with modernization and maintenance of refineries.

Thus the continued satisfactory conditions in the petroleum industry have promoted similar results among oil field and refinery equipment and supply concerns, and all this business based on petroleum has greatly helped to sustain general business activity in the oil country.

Business magazines, in maps showing business conditions throughout the United States, currently indicate that areas offering the best situations include substantial portions of the states of Arkansas, Louisiana, Texas, New Mexico, Oklahoma, Kansas. Significantly, those states furnish a very large proportion of all United States crude oil production, and they also constitute a region in which much of the country's oil refining, natural gas production, and oil and gas pipe line activity is concentrated.

Divorcement Bill Opposed

Slow to get started, the tide of opposition to the Gillette bill, providing for the divorce of marketing from other branches of the oil industry, is rising rapidly, more than 150 letters and telegrams having been received during the past week by the Senate Judiciary sub-committee in charge of the measure.

Program of the sponsors of the bill is, later, to secure enactment of a measure also divorcing pipe line transportation and, by inference, tanker transportation, and eventually the formation of independent cooperative refining and marketing groups.

Opponents of the legislation will be heard by the subcommittee later this month, proponents having finished their presentation.

No Drilling Around Government Reserves

The quarantine zone of one mile, within which no government permits for drilling will be granted, originally surrounding the two Naval Petroleum Reserves in California, has been etxended to all reserves of the government.

Orders issued by the Secretary of the Interior prohibits the granting of permits within one mile of the boundaries of the Buena Vista (California) reserve, the potential field in Alaska, and the Utah helium reserve. The idea of the quarantine zone is to prevent drainage of the government reserves.

Drilling

A WILDCAT two miles west of Ellinwood, Barton County, Kansas, proved a field opener. A new 48-gravity horizon developed when a wildcat a mile south of Chase pool showed for commercial production from Misener sand at 3378 feet. Kansas also recorded extensions for Zenith, Wherry and Silica pools.

Ramsey pool, recently opened in Payne County, Oklahoma, got its third dry hole, but a wildcat in the same county continued blowing gas while fishing.

In Illinois, Olney's hopes of an oil field within the city limits were dimmed by a few dry holes, but a wildcat near Plainview, Macoupin County, got a 3,000,000-cubic foot gas flow while drilling at 400 feet.

Another "gusher," this one for 700 barrels, is being completed in Silverville pool, 9 miles south of Bradford, Pennsylvania.

Tennessee's Picket County wildcat is preparing for a pumping test, and it is thought the play will extend into four other counties.

The Panther strike in Archer County, North Texas, may indicate a series of deeper pools for the greater K-M-A district. K-M-A proper was extended by a showing in a wildcat 2½ miles west of production.

Church & Fields and Gulf-Waddell pools of West Texas may be linked by a Crane County wildcat showing for production. A Pecos County wildcat looks like a small producer at 1639 feet. Two extensions, one west, the other southwest, loom for the Yoakum County part of Wasson.

A Gray County gas district semi-wildcat in the Texas Panhandle developed a spray of oil while carrying 20,000,000 cubic feet of gas from broken lime.

A new sand found at Segno, Texas Gulf Coast, points to development of Sparta formation production along the Conroe trend. An accident resulted in the first commercial oil well for Labelle field.

In Southwest Texas, Maetze field of Goliad County got a new sand and a half mile extension. A field of apparently large proportions is being opened south of Alice in Jim Wells County; another new one is being brought in near Ben Bolt in the same county. A new Greta sand field is being opened near Sinton in San Patricio County.

Market briefs

Outlook—Continuing stable conditions are encouraging.

Crude Markets—Prices continue unchanged.

Refined Oil Markets—Gasoline prices steady; fuel oils down.

CURRENT OPERATIONS

Week Ended	Daily Crude Production	Daily Crude Runs to Stills
April 2	3,367,250	3,145,000
Previous week	3,405,600	3,080,000
Year ago	3,422,350	3,005,000

CRUDE STOCKS

Date	Crude Oil (Barrels)
March 26	307,557,000
Week ago	306,380,000
Year ago	293,587,000

REFINED OIL STOCKS

Date	Gasoline (Barrels)	Gas & Fuel Oil (Barrels)
April 2	92,924,000	123,621,000
Week ago	92,858,000	122,969,000
Year ago	83,157,000	95,805,000

DRILLING

Period	Wells Completed
Past week	425
Previous week	444
Year ago	595
Year Total:	
This year	6,788
Last year	6,999

Technology

EVERY barrel of water produced in the East Texas field exacts a sizeable economic toll. From the standpoint of ultimate recovery alone, unrestricted water production may result in a loss of from 350 million to 625 million barrels; an output greater than the combined cumulative production of Spindletop, Humble and Powell fields. These are the conclusions drawn by Stuart Buckley in a discussion of East Texas pressure relationships on page 19. The magnitude of such possible losses should focus attention of every East Texas operator on the problem of its restriction. Whatever remedial measures may be taken should be inaugurated before damage to the point at which it is irreparable.

New fishing methods have been devised, one of which is described on page 36. The various important steps in its operations are illustrated. The article is written by Joe Chastain and describes an actual instance in the Oklahoma City district.

Another technical feature in this issue is the fifth installment of the series on U. S. S. R. crude reserves. In this chapter, David Wosk discusses the Soviet organization system, the Daghestan and Grozny region fields.

Production Picture

Shell cuts Oklahoma and New Mexico purchases 20 percent . . . Thompson accuses Louisiana of hogging market . . . California reduces more

ANOTHER purchaser of crude oil has taken note of overproduction, which has caused both crude and gasoline stocks to increase in recent months. Last week, Shell Petroleum Corporation announced it would curtail its purchases in New Mexico and Oklahoma 20 percent.

This is the first application of pipe line proration in New Mexico in the present situation, but similar action has been taken previously by other concerns in Oklahoma, Kansas and Pennsylvania. Meanwhile, efforts made to reduce production in California last week struck a snag in the important Wilmington-Long Beach Harbor field, when city and harbor officials, along with one oil concern, expressed unwillingness to adhere to proposed schedules. However, it was felt that the matter could be ironed out, and that this would not interrupt the success California has attained in its recent drive to reduce production.

Shell Offers Dual Reduction Basis

Shell Petroleum Corporation effective April 10 will curtail its purchases in Oklahoma and New Mexico 20 percent.

Shell Petroleum Corporation's plan in both Oklahoma and New Mexico is to purchase in April but 80 percent of the daily average run from each lease during the month of March, or to buy 80 percent of the normal daily allowable as set by the conservation authorities for April. Purchases will be based on the smaller quantity of the two methods.

The foregoing will not apply to leases where the daily average per well production is 10 barrels or less.

Moreover, Shell Petroleum Corporation announced it would withdraw from the Oklahoma City district as a crude purchaser effective April 15.

Similar Action by Others

Crude purchasing curtailment by Shell Petroleum Corporation follows similar action taken by others. The previous week, Carter Oil Company added it's name to the growing list of concerns limiting crude purchases in Oklahoma. Carter's plan is to take but 80 percent of the allowable from all fields in Oklahoma, except Tussey and Jim Wells.

In Kansas, Stanolind Crude Oil Purchasing Company and Phillips Petroleum Company have been taking but 75 percent of the output of leases they serve. Sinclair Prairie Crude Oil Marketing Company is buying but 85 percent.

Early this year, Sinclair Prairie Crude Oil Marketing Company announced a reduction of 10 percent in purchases from Oklahoma leases, but is now taking the full allowable.

Similar action has been taken in Pennsylvania. Effective April 1, Bradford Transit Company announced it would run crude from producer's tanks only to the amount buyers would agree to accept for immediate shipment. This action followed announcements by Quaker State Oil Refining Corporation and Bradford Oil Refining Company that they would accept reduced amounts of crude starting April 1. The Quaker State company is taking 85 percent of the supply accepted in January. Bradford Transit is the largest gatherer in the Bradford and Allegany fields, source of approximately 70 percent of the current supply of Pennsylvania Grade crude.

Four price cuts since last fall have brought present Pennsylvania quotations to a point approximately 30 percent lower than they were a year ago, and there is no immediate relief in sight.

New Mexico Hit

Shell Petroleum Corporation is one of the leading purchasers in Lea County, New Mexico. In March, this year, the company bought about one-third of the production there. The April allowable for Lea County is 99,835 barrels. Therefore, the action of Shell Petroleum Corporation will result in a reduction of approximately 6,750 barrels daily in the county.

Other leading purchasers of oil in Lea County are Humble Oil & Refining Company, Gulf Refining Company, The Texas Company, and Atlantic Refining Company. These companies have not taken action to meet Shell's movement, although it is understood all are long on both New Mexico and West Texas crudes and that they do not want the extra production thrown on the market.

Cuts Off in Oklahoma City

Shell Petroleum Corporation also is one of the largest purchasers in Oklahoma, and its reduction of 20 percent will be felt there—particularly in view of the action of Carter Oil Company the preceding week.

Withdrawal of Shell as an Oklahoma City buyer on April 15 will leave its mark also. Westgate Oil Company is said to have turned 80,000 barrels to Shell from its Carey lease in February, which, so far as is known, remained without a buyer the end of the week. Also affected were Phillips Petroleum Company, from whom Shell bought over 20,000 barrels in February, and Skelly Oil Company, which sold Shell nearly 20,000 barrels in February. However, both Phillips and Skelly had made arrangements to have their crude output handled.

Much of the reduction imposed by Shell Petroleum Corporation and Carter Oil Company will be absorbed by the production departments of these companies, as they are large producers in the areas in which they buy.

Both Carter and Shell will curtail their own production as well as that of their customers. In the case of Carter, it is said about 50 percent of the production affected is owned by the company.

May Have Benefits

While adoption of pipe line proration is an action not desired by anyone, it is possible that benefits for the industry as a whole may come from the present situation.

This additional curtailment, in addition to state proration, should help to prevent further accumulation of surplus crude and refined products, if not to bring about some reduction of present surpluses of gasoline and other refined products, which represent surplus crude in refined forms.

If exceptionally strict production control continues, as it now appears that it will, considerable stability may be promoted. In recent weeks, the gasoline market has tended to strengthen, which together with stricter control of crude output, has added strength to crude oil markets, which were showing some signs of unsteadiness several weeks ago.

Thompson Asks Louisiana To Do its Share

Curtailment of production by crude purchasers in Oklahoma, Kansas and New Mexico, was seen last week by Colonel Ernest O. Thompson, chairman of the Interstate Oil Compact Commission and member of the Texas Railroad Commission, as offset the Sunday shutdown plan in use in Texas. At the same time Thompson stated the worst spot on the picture of oil production is in Louisiana, and declared "I intend to smoke 'em out," as they should be fair on this matter.

Thompson's statement of the situation follows:

"I notice that some crude buyers in Oklahoma are taking only 80 percent of the allowable starting April 10; and in Kansas two large crude purchasers are buying only 75 percent of the allowable as set by the Corporation Commission of that state.

"This offsets our Sunday shutdown. It is about time that runs were reduced up there and I am glad to see cooperation in other states in our efforts to keep oil production within consumption.

"The latest figures show that crude stocks are up 1,177,000 barrels to a level of 307,557,000 barrels.

"Gasoline stocks are up 66,000 barrels to a level of 92,924,000 barrels.

"The worst spot on the picture of oil proration is in Louisiana where the oil tax is eleven cents a barrel. There some big companies are producing as much as five, six and seven hundred barrels per day from individual wells.

"Those same companies are operating in Texas and pretend to be great conservationists.

"It strikes me that the laws of nature and the common sense rules of

good production practice would govern in both states or anywhere else.

"I intend to smoke 'em out and intend to confront these operators with the figures at the next proration hearing on the 18th of the month.

"They ought to tote fair on this proration matter. The information we have is that the producers produce all they desire to flow from their wells.

"They simply pay the tax of eleven cents a barrel and produce all they care to flow up to the limit of the wells ability.

"I am not complaining at the authorities of the state of Louisiana. They represent a sovereign state and they have the privilege of making such rules and regulations as they see fit and proper. That is their right. No other state can properly interfere. No other authority has the right to dictate to the sovereign state of Louisiana how it shall control its own internal production matters. That is a matter purely and solely of state concern.

Appeals to Producers

"But I am protesting the action of these companies in producing wide open when our operators in Texas are reduced to a per well average of 27 barrels per day in our prorated fields and shut in one day a week to boot additional.

"I believe that when these companies see the light they will promptly reduce their takings to figures similar to the allowables in Texas.

"This would be only fair. To do anything else would be to admit *poor sportsmanship* and bad faith to say the least.

"We shall expect to hear from these companies and hope that calling attention to the inequality and inconsistency of their policy will get results.

"The people of Texas expect this Commission to fight for our share of the markets. We will not fail them! We never have failed to fight for Texas.

"The Interstate Oil Compact Meeting at Wichita, Kansas, on April 29 and 30, will also have this matter up for discussion unless it is corrected before that date."

Expect additional California reduction

Daily average production in California, according to the oil umpire's office, has been averaging around 716,000 barrels. While not yet down to the actual April crude production quota, the hoped for goal, this is a considerable improvement over a few weeks ago. However, additional reduction is expected, when a new program becomes effective at Long Beach Harbor, the "hot" spot in the situation at present.

After receiving a set-back in procuring a drastic curtailment in the Wilmington-Long Beach Harbor field earlier in the week, the committee headed by L. L. Aubert believed a solution had been reached that would result in a drop of about 13,000 barrels daily. This decline will be the result of a new arrangement, through which operators have waived previously used rights of flowing 45,000 barrels of oil before cutting their wells back to 1000 barrels daily. The new plan is to cut back as soon as a well cleans itself. Completion of several gusher wells, which usually flowed 2500 barrels daily, had kept production high.

Earlier in the week it had been proposed that a quota of 750 barrels of oil be allowed each well in the Wilmington-Long Beach Harbor field, instead of the 1000 barrels as a basis for daily output. This was objected to by the Board of Harbor Commissioners, the Long Beach City Council and Universal Consolidated Oil Company. However, elimination of the 45,000-barrel quota before curtailing to 1000 barrels daily, as adopted later in the week, will have practically the same results.

In the meantime, a 10-day holiday for the Lake View field in the San Joaquin Valley has been a success. This field on April 1, according to a report issued by the oil umpire for the Central Committee of California Oil Producers, did not produce a single barrel of oil, and for the 10-day period every well in the field remained shut in. For April the field has an allowable of 10,725 barrels daily. The voluntary shutdown therefore represents a curtailment of 107,725 barrels for the 10-day period. This method of curtailment, which is strictly voluntary, was used by Lake View operators a year ago to help the committee make its program effective.

There has been talk of shutting in other California fields, but nothing has been accomplished along this line to date.

Per Well Allowables of Certain Louisiana Fields

(As of March 10, 1938)

FIELD	No. Wells	Per Well Allowable (Barrels)
Abbeville	2	276
Bateman Lake	1	350
Bayou Sale	1	400
Bayou Black	18	208
Caillou Island	26	403
Charenton	8	231
Choctau	6	209
North Crowley	5	250
Darrow	10	250
Dog Lake	3	833
Evangeline	98	186
Garden Isle	6	450
Gibson	6	500
Iowa	53	283
Jeanerette	21	334
Lafitte	21	571
Lake Long	2	500
Lake Pelto	5	250
New Iberia	36	417
Quarantine Bay	1	750
St. Martinsville	2	375
Timberlier Bay	1	554
Valentine	15	366
Venice	2	750
Ville Platte	2	400

Texas Rodessa is Allowed 37,000 barrels

An allowable of 37,192 barrels daily was put in effect April 1 in the Jefferson-Rodessa area by the Texas Railroad Commission.

A total field allowable of 6686 barrels daily for the Jefferson district, Marion County, Texas, was given. The schedule listed 55 producing wells. Total acreage allotted to oil wells was 1,095.20 acres, the acreage factor being one acre equals 3.2459590 barrels with a bottom hole pressure factor of .02489708 pound.

In Cass County (Rodessa field) 66 wells producing from the Gloyd horizon were given daily allowable of 6797 barrels with acreage allotted to these wells placed at 889.82 acres. Two hundred and seventy-seven wells in Cass County producing from the Dees-Young horizons were given an allowable of 23,709 barrels with acreage allotted to them being 5,077.31 acres.

Arkansas calls hearing

The Arkansas Board of Conservation last week issued a call for a hearing to be held at El Dorado, April 20, to hear evidence and to determine "if waste of crude oil or natural gas is taking place in the state or is reasonably imminent."

The board also announced it would hear evidence on the following:

1. Reynolds (Permian) lime of Schuler (Union County).
2. Proration of dry natural gas in the south Miller County (Rodessa) field.
3. Adoption of Basic rules.

Kansas potential rule amended

Rule 100-B, Paragraph 1, which governs methods of taking potentials in Kansas has been amended by the State Corporation Commission to read:

"The physical tests shall be taken of all wells in the manner in which they are normally produced, namely, flowing wells by natural flow and pumping wells by pumping with reciprocating pumps using not to exceed 3-inch working barrel and not to exceed 54-inch pumping stroke and producing through not to exceed 3-inch tubing or producing through casing without the use of tubing, but with the same restrictions as to working barrel and stroke."

Kansas commission adopts gas standard

Effective April 1, all gas volumes in Kansas fields shall be computed on a pressure basis of 2 pounds per square inch above an assumed barometric pressure of 14.4 pounds per square inch, or 16.4 pounds absolute pressure. The notice, issued by E. G. Dahlgren, conservation director, brings basis for computation into conformity with Mid-Continent standards.

Development must be in proportion to offsets

In an opinion handed down by the Texas Supreme Court last week, the "unless" clause of oil and gas leases was interpreted.

The court held that the drilling of the first well on property satisfied the escrow agreement and the lease requirements where the escrow agreement called for proving up the property and the lease required adequate development.

However, while the lessor has discretion as to where additional wells shall be drilled, he must proceed with development in a reasonable manner and may not develop at his option. In other words, development of each lease must be in proportion to the tracts surrounding to satisfy the lease clauses after the escrow agreement has been fulfilled.

Oil at the Capitols

Hearing for divorce bill opponents planned as opposition grows . . . Ickes prohibits drilling near borders of federal-owned oil reserves.

OPPONENTS of the so-called "divorce" bill, which would separate marketing ownership from all other branches of the oil industry are to have their date before the committee studying the question. This announcement came after growing opposition to the bill became evident, which was the most important legislation development of the week. Meanwhile, a second hearing for proponents was held, at which additional charges were made that major oil firms were using their marketing divisions squeezing out the independent.

In another ruling pertaining to federal owned crude reserves, provisions eliminating drilling for oil and gas within one mile of the exterior of such reserves were extended to the Buena Vista, California, tract, to the potential resources near Point Barrow, Alaska, and to the helium reservation in Utah.

Opposition to divorce bill mounts

A mounting tide of opposition to divorce legislation this week influenced the senate judiciary subcommittee in charge of the Gillette bill to provide additional hearings toward the end of this month at which objections to the legislation could be submitted. Exact date for the hearing will be fixed later by Senator Pat McCarran (Dem., Nev.), chairman of the group.

Announcement that opponents of the bill, which calls for the divorce of marketing from other branches of the industry, would be given an opportunity to testify was made April 5 following a second hearing for the benefits of the proponents at which representatives of the Illinois, Indiana and Wisconsin independent associations entered a plea for enactment of the measure.

Pipe Line Also

For the first time, the independents pressing the bill disclosed that their full program calls for divorce not only of marketing but of pipeline transportation, as well, and the formation of independent cooperative refining and marketing groups to compete with the majors after the latter have been stripped of the advantages derived from their ownership of transportation and marketing facilities.

Calling attention to the Great Lakes Pipe Line Company system, from Okmulgee, Oklahoma, to the Great Lakes, which he said entirely paid for itself within a few years and now is a source of great profit to the eight companies which own it, C. O. Beroth, of Acme Petroleum Company, Chicago, a witness for the Government at the Madison trial, said the pipeline charges the same rate as the railroads for the gasoline it carries, although the cost of that transportation is but a fraction of the charge.

The line, he said, is owned jointly by Continental Oil Company, Mid-Continent Petroleum Corporation, Skelly Oil Company, The Texas Corporation, Pure Oil Company, Phillips Petroleum Company, Barnsdall Corporation and Sinclair Refining Company.

Beroth charged that in addition to the profits from the pipelines they run, the major companies have heavy profits from production, particularly in the East Texas field, where the wells brought in before proration paid for themselves within a few months. Explaining that the companies, on the average, buy half and produce half of the oil they refine, the witness sand that 10 cents a barrel would be a fair lifting charge for their own production from their paid-for wells, so that, on the basis of $1.30 oil, a barrel of oil produced and a barrel bought would cost $1.40, or an average of 70 cents a barrel, while independent competitors have a crude cost of $1.30.

The independent jobbers do not participate in the production and transportation savings, he said, although the companies' own dealers do and are thereby enabled to break prices whenever they feel it desirable.

Enactment of the Gillette bill would eliminate the advantages now enjoyed by the majors, he said, but admitted, in response to a question by Senator Borah (Rep., Idaho), that the bill is only a start and other steps would be necessary to place the independents in a secure position.

Neither Beroth nor Russell Williams, Indianapolis, who also discussed the independents' plans, disclosed exactly how the proposed cooperative refining-marketing project would be accomplished, but it was indicated that it would, in some ways, be an adaptation of the majors' practice which they are challenging.

That the majors use their stations for advertising purposes was charged by Roy L. Brecke, of Milwaukee, who declared an investigation by the Wisconsin Department of Agriculture and Markets developed that it cost the majors from 7 to 28 cents a gallon to market gasoline in some localities.

Opposition Develops

Expression of opposition to the bill, slow to get started, has in the past ten days assumed large proportions, Senator McCarran stating that he has received probably 150 letters and telegrams from all sections of the country, as well as a large number of telephone calls, urging abandonment of the legislation.

Major objections to the bill expressed in these communications are that it will merely set up an increased number of middlemen, revolutionize the entire marketing practice of the industry and result in increased costs of gasoline to the consumer.

About a score of independent associations have written to the subcommittee in support of the bill, several of them alleging that with crude prices maintained at a high level and prices of gasoline and fuel oil declining the independent refiners cannot long continue to operate.

Presentation of the case for the proponents has about been concluded and remaining hearings will be devoted to the opponents. In view of the fact that adjournment of the session is being sought by June 1, it is not anticipated that any action on the measure will be possible this year.

Prohibit leases near federal reserve boundaries

The Secretary of the Interior on April 2 extended to the Buena Vista petroleum reserve in California, the potential resources near Point Barrow, Alaska, and the military and naval helium reservation in Utah, a ruling of October, 1933, applicable to Naval Petroleum Reserves Nos. 1 and 3, prohibiting the granting of applications for oil and gas leases on lands within one mile of the exterior boundaries of such reserves.

The new regulations follow closely upon the verdict of the California court holding Section 36 of the Elk Hills sector to be government property and the ruling, last week, by the Commissioner of the General Land Office that title to Section 16, in the same area, also lies with the government.

"It is now the established policy of the department not to grant permits within one mile of a naval petroleum reserve," Secretary Harold L. Ickes explained.

The one-mile restriction limit is imposed because mining experts estimate it affords an adequate margin of protection from draining of the oil resources by private wells outside the reservations.

Reserve ruling creates little concern in west

The ruling of the Elk Hills naval reserve oil lands in California to the federal government, which considers them essential of national defense because of their proximity to the Pacific fleet, does not seem to be causing as great concern in California as it first appeared.

It has been pointed out that Section 16, on the southwestern border of the San Joaquin Valley in Kern County, the most recent section in dispute, has never had a producnig well, and that those on Section 36, which was won back by Secretary of the Interior Ickes, in a recent federal district court decision and is on appeal in the circuit court of appeals, are practically exhausted. These sections were granted to California by congress in March, 1853, in a law whereby Sections 16 and 36 of every township of public lands in California "shall be and hereby are

granted" to the state. General Petroleum Corporation held most of Section 16 and Standard Oil Company of California most of Section 36.

State finance director Arlin E. Stockburger said Wednesday of last week that he regarded the federal government, in claiming the Elk Hills naval oil reserves, resorted to subterfuge because of three factors—insufficient authority of the President to set aside the lands by proclamation, the oil had not been reserved but developed, proceeds have not been returned to the navy but are instead placed in the general fund. He also added that it appears the federal authorities are trying to develop additional ground on which to stand. He emphasized his opinion that California's title to the tidelands is indisputable, based on reservations under which California and other coastal states entered the union, and should a similar attempt be made with respect to state tidelands the matter would be fought in court.

Assess tax on stored gas in depleted sand

Tax officials of Anderson County, Kansas, through the state tax commission, have placed a valuation of $720,000 on a huge quantity of gas stored in old gas wells in the county by Cities Service Gas Company, and are seeking to collect approximately $10,000.

The company bought a large block of leases in May of 1935, on which were numerous abandoned gas wells, into which it piped gas from Oklahoma and Texas fields, creating a vast underground storage. The company is objecting on the grounds the gas had already been taxed and would be nontaxable because it would move in interstate commerce.

Labor Situation

Humble case testimony sent to Washington

HAVING finally closed the four weeks hearing of alleged unfair labor practices of Humble Oil & Refining Company, testimony of 153 witnesses covering about 4000 pages of court records was sent last week to the National Labor Relations Board, Washington, D. C., for further consideration.

Trial examiner James C. Batton, who conducted the hearing at Baytown and Corpus Christi, is scheduled to make his intermediate report to the labor board within the next few weeks. This report, containing his recommendation, will be sent to all parties concerned, and in case they disagree with the recommendation an opportunity will be given to them to discuss the case orally before the board in Washington within a ten day period. If the parties concerned are not satisfied they may appeal through the Fifth Circuit Court at New Orleans, Louisiana, for submission to the Supreme Court of the United States. However, in case the court already has ruled on cases similar to those involved in Humble Oil & Refining Company's hearing, the Supreme Court may deny a hearing.

Mexico's Oil Muddle

Britain asks return of properties . . . Opinion is relief through courts not forthcoming . . . Government optimistic . . . Business is dull

ASSERTING that expropriation of Mexican Eagle Oil Company's properties in Mexico was inherently unjustified, England protested President Cardenas' action in the form of a 1300-word note which Minister O'Malley handed to Cardenas in half-hour interview on April 8.

Britain is acting on her own in this case, that is, independent of the United States.

The note in substance asserted that London differs from Mexico in interpretation of international law regarding expropriation in this case.

The note is not written with the tenor of an ultimatum, but it does request that Mexican Eagle Oil Company's property be returned.

Word from Mexico City at 4:05 p.m. April 8 was that Cardenas accepted the note calmly and with dignity and that the general public of Mexico, while surprised along with the government, which had been confident there would be no diplomatic representations in the oil question because of Washington's stand, was not indignant.

Mexico's answer to the note is not expected until next week.

FEELING in Mexico seems to be that regardless of whatever legal rights to relief from the president's expropriation decree the oil companies might feel they have under the constitution of Mexico, attempts to obtain relief through the courts probably will prove abortive, especially in the light of the current wave of nationalization sweeping the country. To quote one Mexican resident's letter in speaking of the suits filed by the oil companies early in the week: "It is deemed that neither of these suits, or others the companies might file, will hamper the government's operation of the oil business."

One injunction suit filed early in the week by the 17 expropriated companies attacks the legality of the expropriation decree; another attacks the legality of the order of the federal labor department of Mexico cancelling work contracts with the companies' employees. (The order was issued on the eve of expropriation and included the mandate that the firms must pay their workers compensation of three months wages each, totaling about 150,000 pesos. The order was issued, incidentally, at the workers' request). The two suits naturally lead up to a third legal move, that of asking the department of national economy for an administrative revocation of the presidential expropriation decree.

An additional suit was filed in a Mexico City court by Compania Petrolera Ulises, S. A., which seeks an injunction against the government's action in expropriating machinery on the basis that the expropriation law provides only for the taking of lands and waters. The petitioning company is a member of Cia Transcontinental de Petroleo group, it is said, one of the subsidiary organizations of Standard Oil Company of New Jersey.

Although the companies' properties were expropriated because they claimed they were unable to meet the demands of the workers when ordered to do so by the federal conciliation board, those workers are still continuing to work for their old wages and are paid each Friday. The government has not put into effect those raises for which the companies were ousted for refusing to meet.

"Work in the industry is progressing favorably," says the government oil control board. But persistent reports are that production is either at, or pretty close to, a minimum. Two of the larger refineries on the coast are working below par, but just how much below par cannot be ascertained. Such information is not being broadcast. Production in Mexico last year totalled about 43,000 barrels.

Mexican Eagle Oil Company's refinery at Mexico City is handling normal runs, both the government and labor officials say.

Dumping Oil

Asked about the rumor that a still had gone out in one of the larger refineries on the coast, information came through that: "There is no information about the disabling of a pressure still on the coast, but reliable sources say there is very little empty storage left—just how much cannot be determined. Rumors are that some reservoirs are nearly bursting and that much oil is being dumped in the rivers in the Puerto Mexico sector of southern Vera Cruz."

Flies in Ointment

The government seems to be having a little trouble of its own with the workers in some places. The ministry of national economy has ordered the oil workers' union to keep its hands off two companies, Petrolera Neptuno and Industrias Consolidada, as it deems that if the unionists remove papers and other documents from the firms' offices much trouble will result for the workers and for the government. Workers have also been instructed by the govern-

ment not to drill or explore on these companies' properties until further orders.

The latter order involves two problems. Either the government must pay the workers without getting labor value in return, or it must lay them off and incur their displeasure.

Another fly in the ointment developed for the government during the week when the oil workers' union asked a Mexico City court for an injunction against the action of the federal labor board in rejecting the union's demand made last June of the Huasteca Petroleum Company calling for the company to share profits with employees.

Public's Reaction

In an effort to determine the feeling in Mexico proper, this publication contacted a source in Mexico City by telegraph with the following question:

"What is today's attitude of people regarding oil industry situation there?"

The following answer was received April 7:

"The public seems to be generally satisfied with the oil industry situation. Large numbers of individuals and organizations of industrial workers, farmers and white collar classes are contributing to the fund the government of Mexico has started to indemnify the oil companies for expropriation. The government is continuing to stimulate enthusiasm by various kinds of publicity—wide distribution of propaganda booklets, placards in all public places, radio talks, trailers in cinemas, meetings in the street, etc.

"But there is a listlessness noticeable; people are not generally very animated. Business is very dull."

With reference to the contributions made to the fund started by the government to reimburse the oil companies, one man pointed out that a situation somewhat contrary to the tenor of the foregoing message is impressed upon a student of the situation through a perusal of daily papers. From them is garnered a conception that most of the organizations that have actively taken up the banner of the government in swelling the fund are organizations whose future potency or past impotency in affairs politic might be assured or changed to a certain degree by the favor or disfavor emanating from the presidential palace, he inferred. In other words, the list of prominent contributors includes such as: the oil workers' union, various local labor unions, soldiers of the army, government employes, and church dignitaries.

One Old-Timer's Feelings

How some of the old-timers down in Mexico feel about the expropriation is expressed in the following communication received by The Oil Weekly from Mexico City April 6:

"Names of the expropriated oil companies which for long were as familiar in this country as that of Mexico herself have officially disappeared. Headquarters of the companies are now known as sections of the oil workers' union. If you forget and say Huasteca, California Standard, Pierce or Eagle when you call in person or by telephone at these establishments, you are curtly informed that such names are strictly out, and that what you really mean is Section No. 1 or 2, 3 etc., of the union.

"The government's oil board has moved right into the handsome building Mexican Eagle Oil Company finished at a cost of some $600,000 as its headquarters shortly before expropriation. The board is even using the visitors' announcement slips that served the Eagle."

Living Costs Soar

Living costs in Mexico are undoubtedly higher today than they were prior to the expropriation decree of President Cardenas on March 18. A comparison of costs on vital foodstuffs in Mexico City before expropriation and as of April 6 is shown in the following table:

Commodity	Price of commodity before expropriation	Price of commodity as of April 6
Wheat Flour	40 centavos per kilo	50 centavos per kilo
Milk	30 centavos per liter	32 centavos per liter
First Class Beef	1.20 pesos per kilo	2.00 pesos per kilo
Beef, Common Cuts	70 centavos per kilo	1.20 pesos per kilo

There has been no reduction in the price per loaf for bread, but the weight per loaf has been reduced. This, however, was effected prior to expropriation.

The Mexican peso, quoted at 3.60 pesos to the U. S. dollar the day before expropriation, has since dropped to as low as 5.15 to the dollar. April 2 it had firmed to 4.50 and 4.60 to the dollar, and by April 6 had further strengthened to 4.40 to the dollar. This strengthening, however, still leaves it 80 points less valuable than it was before expropriation, even though it has had the benefit of the reviving influence of resumption of work in one of the nation's largest silver mines.

As to business conditions in general following in the wake of expropriation, the "business is very dull" quotation from the foregoing message from Mexico City will be recalled. American automobile financing agencies in some instances have been reported to have ceased operations. One statement is that "cars can be bought only for cash and increased prices at that." However, General Motors Corporation issued a statement that work on its Mexican assembling plant is continuing on schedule.

Compania Mexicana Aviacion, agent in Mexico for Pan American Airways, will suffer more than it has if passenger and mail business afforded by the oil companies ceases entirely, it is pointed out. Companies handling such articles as refrigerators, tires, washing machines, radios, and other articles generally bought on the installment, have felt the blow resulting from expropriation. Installments are paid in devalued pesos when they come due, and the purchasing power of the people at prices revised to coincide with the buying power of the peso is lowered. In this connection, parties labelled as "reliable financial sources" in Mexico City have been quoted as saying: "The currency coverage of the Bank of Mexico is down to around 30 percent, and the government has overdrawn on that bank."

Tourist Trade Down

Touching general business, also has been the reaction of tourist trade into Mexico since expropriation. It is estimated American tourists spend annually $40,000,000 in Mexico. Most of it goes through Texas ports of entry, and queries directed to some of these indicate a heavy falling off in rail and automobile travel into Mexico.

To illustrate the downward trend in tourist trade, the office of the deputy collector of the United States customs service of the treasury department at Laredo, Texas, the main port of entry, submitted the following figures to THE OIL WEEKLY for comparison:

	During Two Weeks Ending Mar. 19	During Two Weeks Ending Apr. 2
	1938	1938
Number of Persons entering Mexico through Laredo.....	651	359
Number of automobiles entering Mexico through Laredo...	924	543
Number of tourists entering Mexico, using the time established factor of 3½ persons per car	32,340	19,005

The above drop in travel into Mexico can be partially attributed to reticence on the part of some people to visit there while the zeal of the "Mexico for Mexicans" sentiment is a bit more fiery than usual and has in some instances been openly antagonistic to foreigners, particularly to the Americanos.

In addition, A. R. Kahn, the deputy collector, in discussing the drop in tourist travel in the opposite direction, writes:

"The number of tourists from Mexico has greatly diminished. This was to be expected, because most of the tourists from Mexico come for the express purpose of purchasing merchandise, and the fall of the peso makes those purchases unprofitable."

Control Board Optimistic

Press dispatches early in the week carried an announcement from the Cardenas government to the effect that 20 percent of the *gross* receipts of sales of oil abroad would be set aside in a special liquidating fund to reimburse the oil companies for expropriated properties.

[*Continued on page 64*]

LATE FLASHES FROM MEXICO

Mexico City.—Foreign sales will be made only at full market prices, asserted the government's oil export company April 8. The company is closely investigating all inquiries for oil and prospective buyers of dubious solvency must pay cash with the order.

Mexico City.—The government's oil board said April 8 its expenditures since March 26 have been 2,456,000 pesos, about $600,000 U. S., 1,995,000 pesos being for wages up to April 6 and the rest for reconditioning in Mobile the tanker *San Ricardo* which previously belonged to Mexican Eagle Oil Company.

Mexico City.—Oil workers' union April 8 accused oil companies of buying radicals among workers to foment blocking of the oil industry's operation in this country.

Drilling Becomes

By L. J. LOGAN
Associate Editor

DESPITE the brave start that it made in the early weeks of the year, the petroleum industry has begun to slow down a little in drilling.

For the first three months of 1938, the industry did not drill quite as many wells as in the similar period last year.

And as the second quarter opens, field work is lagging somewhat, indicating that well completions probably will continue for some time to run slightly below the levels of last year.

Situation Partly Favorable

The implications of this slowing down of drilling are in one sense unfavorable, because of reflecting less favorable demand for petroleum and less firm markets. But in another sense, the implications are favorable, showing that the industry is adjusting drilling into a more economic relation to market conditions—an adjustment that will make easier any curtailment of crude production needed to hold supply in balance with demand and to preserve stable markets.

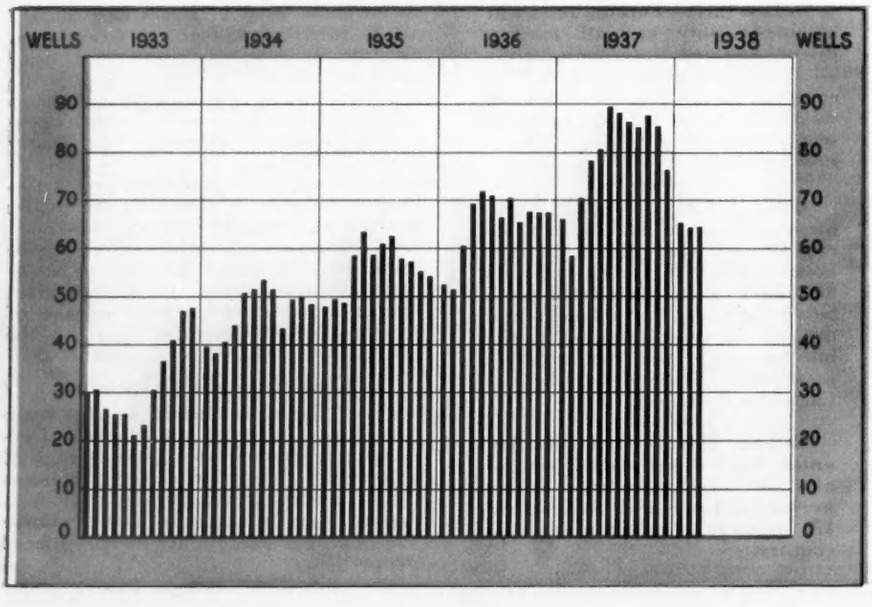
In the initial three months of this year, as a whole, 2/10 of 1 percent fewer wells were completed in the United States than in the corresponding period last year, completions having totaled 5960 in the 1938 first quarter, compared with 5970 in the 1937 opening quarter.

But drilling held up relatively better this year in January and February than in March. For January, the activity was about the same this year as last year, and for February it was larger this year than last year. But in March, 1938, well completions in the United States averaged 64.4 daily, or about 8 percent less than the 70.4 daily recorded for March, 1937. The 64.4 completions a day for March, 1938, were, however, above the average of 60.6 daily for March, 1936.

April Lag Indicated

Furthermore, it is indicated that April quite possibly may bring somewhat fewer completions than did that month last year.

Average Number of Wells Completed Daily in U. S.
(By Months, January, 1933—March, 1938)



In normal years, drilling nearly always shows a substantial seasonal increase in April, as the milder weather and larger oil consumption of spring stimulate activity. In recent years, for instance, well completions usually have been around 10 percent more numerous in April than in March.

Yet at the beginning of April this year, it was indicated that completions for the month might be only slightly above those of March. On April 1, drilling rigs in operation in the United States totaled 3843, or only 1.1 percent more than on March 1. That relatively small increase occurred, moreover, despite the fact that the weather was milder than usual in March this year.

Business Affects Activity

Beyond the end of April, the outlook for drilling is obscure, being made uncertain by the extraordinary economic evolution now in progress.

Obviously, drilling programs will be affected by the general economic developments and the conditions in the oil industry growing out of the general situation. If business in general should improve, drilling likely would be encouraged; while if business should continue about the same or decline further, drilling probably would react similarly.

Drilling Maintenance Likely

As matters stand now, however, they point to a probable continuation of drilling for some time

Less Aggressive

Completions in first three months slightly fewer this year than last year, and further lagging of field development is indicated

around or slightly under the levels of last year.

For so far, there have not occurred many developments directly conducive to any material change in the established trends of drilling.

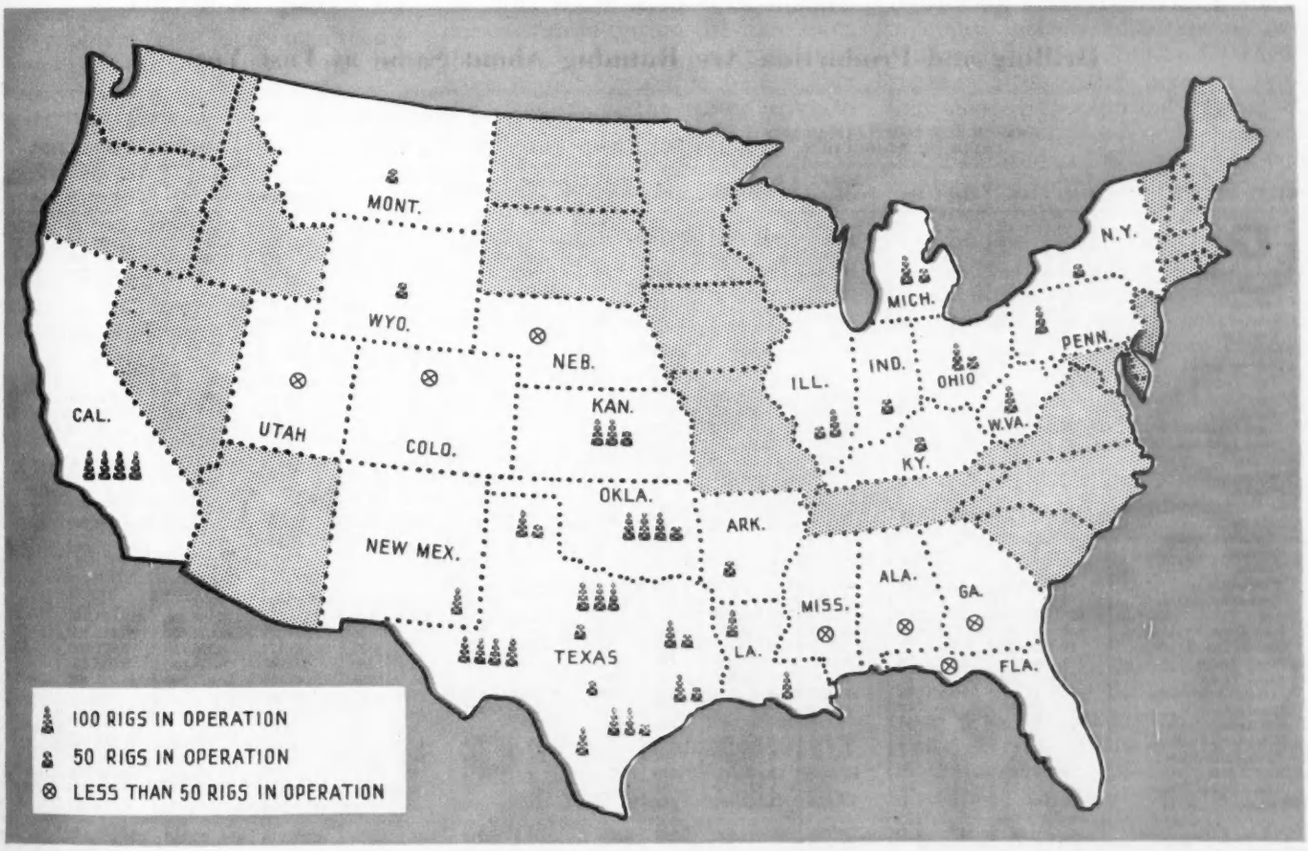
There has not been, in the first place, for instance, any material change from last year in crude oil prices for the United States as a whole. And furthermore, there is not at present any great probability of an early change in the crude price situation.

This crude price picture strongly indicates a similar stability in drilling. For over the years, crude prices have had a dominant and immediate effect on drilling, stimulating field work when favorable and discouraging activity when unfavorable.

Tending to maintain drilling, in the second place, are the comparatively high levels of consumption and production of petroleum. Despite some slowing down in recent months, the demand for petroleum has been running this year at the highest levels in history, having held at least slightly above the demand of early last year; and except in a few weeks, crude oil production similarly has been running in the opening months of this year at all-time record levels for the season, in response to the unprecedented demand. These high levels of consumption and production naturally tend to necessitate the maintenance of active exploration and field development.

While the United States as a whole had for the first three months

Mid-Continent Accounts for Large Share of 3843 Rigs in Use April 1



Number of Active Rigs in U. S. Up Slightly

STATE OR DISTRICT	TOTAL RIGS IN OPERATION (Drilling, Rigs Up, Shut Down) Jan. 1, 1938	Feb. 1, 1938	Mar. 1, 1938	Apr. 1, 1938	Percent Change of April 1 from Mar. 1	DETAILS OF APRIL 1, 1938, ACTIVITY Rigs in Operation: Drilling	Rigs Up	Shut-down	Prelim. Activity: Der-ricks	Loca-tion	Total Oper-ations
Arkansas	43	40	51	51	....	38	8	5	2	3	56
California	360	375	390	401	+ 3	254	77	70	..	85	486
Colorado	28	25	22	25	+14	6	1	18	2	1	28
Eastern States	538	577	563	496	−12	294	67	135	31	37	564
Illinois	144	126	128	130	+ 2	36	22	72	26	42	198
New Fields	121	61	60	72	+20	21	21	30	14	12	98
Rest of Illinois	23	65	68	58	−15	15	1	42	12	30	100
Indiana	36	36	40	30	−25	14	3	13	1	3	34
Kentucky	24	67	56	55	− 2	28	7	20	4	8	67
New York	23	33	35	30	−14	15	3	12	2	3	35
Ohio	122	180	172	148	−14	88	27	33	7	5	160
Pennsylvania	37	124	121	109	−10	70	15	24	2	6	117
West Virginia	152	137	139	124	−11	79	12	33	15	12	151
Kansas	442	266	280	256	− 9	206	32	18	10	36	302
Louisiana	239	201	215	211	− 2	176	21	14	10	34	255
North Louisiana	91	87	104	89	−14	67	15	7	4	4	97
South Louisiana	148	114	111	122	+10	109	6	7	6	30	158
Michigan	209	188	165	172	+ 4	109	24	39	27	27	226
Montana	41	35	37	42	+13	16	2	24	2	2	46
Nebraska	2	4	3	3	....	2	...	1	...	2	5
New Mexico	108	119	95	133	+40	101	6	26	3	7	143
Oklahoma	454	324	329	360	+ 9	283	38	39	14	61	435
Southeastern States	25	21	21	20	− 5	8	2	10	1	4	25
Alabama	4	4	4	4	....	...	2	2	...	1	5
Florida	4	3	4	4	....	1	...	3	...	...	4
Mississippi	17	14	13	12	− 8	7	...	5	1	3	16
Texas	1,646	1,595	1,565	1,602	+ 2	1,291	104	207	151	349	2,102
E. Texas Field	105	97	88	100	+14	75	8	17	27	26	153
E. Texas Border Co s.	37	21	30	32	+ 7	22	7	3	2	3	37
Rest of E. Texas	56	43	48	44	− 8	34	2	8	1	7	52
North Texas	202	256	267	308	+15	270	11	27	22	87	417
South Texas	300	459	461	393	−15	289	40	64	27	67	487
Corpus Christi Area	....	309	317	229	−28	167	27	35	16	48	293
Laredo Area	....	84	89	99	+11	74	10	15	6	13	118
San Antonio Area	....	66	55	65	+18	48	3	14	5	6	76
Texas Gulf Coast	192	139	139	155	+11	137	11	7	22	47	224
Texas Panhandle	170	131	109	128	+17	98	13	17	10	13	151
West Texas	416	386	361	389	+ 8	325	11	53	40	94	523
West Central Texas	63	63	62	53	−14	41	1	11	...	5	58
Utah	....	4	4	6	+50	3	...	3	...	1	7
Wyoming	59	68	60	65	+ 8	26	9	30	3	4	72
Total United States	4,089	3,842	3,800	3,843	+ 1.1	2,813	391	639	256	653	4,752

virtually the same amount of drilling this year as last year, the various states and districts showed widely varying results, some registering increases and others decreases.

Arkansas, North Louisiana, and Illinois have been much more active this year than last, and other especially busy areas have included South Louisiana, the Texas Panhandle, the East Texas field, and the Texas Gulf Coast. Drilling has been slightly more extensive this year than last year also in California, some of the Eastern States, and West Texas. North Texas now is showing the influence of the important deep development at K-M-A, but for the first quarter of 1938 completions of the district were not as numerous as in the similar period of 1937.

Districts where completions have been fewer in 1938 than in 1937 include the Rocky Mountain states of Colorado, Montana, New Mexico, and Wyoming, some of the Eastern States, Kansas, Michigan, Oklahoma, the Southeastern States, Texas as a whole, and Eastern Texas outside the East Texas field, North Texas, South Texas, and West Central Texas.

More Rigs In Use

Rigs in operation in the United States increased from 3800 on March 1 to 3843 on April 1, a gain of 1.1 percent. These figures include wells drilling, rigging up, or temporarily shut down, as shown in detail, by states and districts, in an accompanying table.

Drilling and Production Are Running About Same as Last Year

STATE OR DISTRICT	*MARCH, 1938, COMPLETIONS AND CRUDE OIL PRODUCTION Total Wells	Oil	Gas	Dry	Initial Production	Production for March	COMPLETIONS AND PRODUCTION IN FIRST 3 MONTHS, 1938 AND 1937 WELLS COMPLETED 1938: 3 Mo.	1937: 3 Mo.	Percent Change	DETAILS OF 1938 DRILLING Oil	Gas	Dry	Initial Production	BARRELS PRODUCTION 1938: 3 Months	1937: 3 Months	Percent Change
Arkansas	13	12	....	1	8,586	1,571,700	49	13	+ 277	41	....	8	32,546	4,173,600	2,402,650	+74
California	76	75	....	1	87,312	22,566,400	317	292	+ 9	263	1	53	251,219	65,425,200	52,997,500	+23
Colorado	1	1	....	....	492	122,350	3	5	− 40	1	....	2	492	374,500	360,100	+ 4
Eastern States	270	105	90	75	15,805	4,327,450	900	741	+ 21	307	340	253	39,227	12,386,700	10,359,200	+19
Illinois	62	38	1	23	14,221	.....	186	11	+1590	117	1	68	35,375	.....	.....	....
Indiana	17	3	7	7	34	.....	30	33	− 9	5	10	15	76	.....	.....	....
Kentucky	48	25	8	15	803	.....	165	50	+ 230	75	39	51	2,032	.....	.....	....
New York	2	....	2	....	.....	.....	15	3	+ 400	....	14	1	.....	.....	.....	....
Ohio	74	24	30	20	633	.....	240	403	− 40	66	99	75	1,408	.....	.....	....
Pennsylvania	10	1	6	3	1	.....	49	35	+ 40	7	33	9	97	.....	.....	....
West Virginia	57	14	36	7	113	.....	215	206	+ 4	37	144	34	239	.....	.....	....
Kansas	126	89	3	34	110,334	5,333,800	465	492	− 5	312	27	126	389,034	15,838,600	16,025,800	− 1
Louisiana	73	55	2	16	28,461	8,034,300	264	159	+ 66	179	8	77	97,520	22,987,500	22,001,350	+ 4
North Louisiana	33	30	1	2	15,920	2,439,600	118	52	+ 127	100	6	12	60,243	7,104,200	6,625,800	+ 7
South Louisiana	40	25	1	14	12,541	5,594,700	146	107	+ 36	79	2	65	37,277	15,883,300	15,375,550	+ 3
Michigan	55	33	1	21	6,889	1,625,450	192	194	− 1	125	5	62	27,409	4,579,450	2,915,150	+57
Montana	6	2	2	2	50	385,250	12	17	− 29	6	2	4	380	1,194,600	1,426,150	−16
Nebraska	....	....	....	....	.....	.....	....	....	....	....	....	....	.....	.....	.....	....
New Mexico	40	33	2	5	26,614	3,253,600	121	164	− 26	105	3	13	76,377	9,528,100	8,747,950	+ 9
Oklahoma	158	99	12	47	20,868	15,920,800	531	665	− 20	339	39	153	76,792	47,235,750	54,581,600	−13
Southeastern States	1	1	....	....	240	.....	6	6	.....	1	....	5	240	.....	.....	....
Alabama	....	....	....	....	.....	.....	....	1	.....	....	....	....	.....	.....	.....	....
Florida	....	....	....	....	.....	.....	....	....	.....	....	....	....	.....	.....	.....	....
Mississippi	....	....	....	....	.....	.....	5	5	.....	....	....	5	.....	.....	.....	....
Tennessee	1	1	....	....	240	.....	1	....	.....	1	....	....	240	.....	.....	....
Texas	976	733	31	212	1,220,595	40,398,500	3,081	3,198	− 4	2,361	104	616	3,903,858	116,885,200	119,064,550	− 2
East Texas Field	186	183	....	3	911,340	13,278,450	605	469	+ 29	589	....	16	2,939,535	39,824,400	40,612,400	− 2
Rest of East Texas	42	20	4	18	12,623	3,017,750	134	222	− 40	90	7	37	46,177	8,195,150	9,877,650	−17
North Texas	171	113	2	56	59,731	2,157,250	479	528	− 9	322	5	152	159,166	6,116,550	6,002,250	+ 2
South Texas	221	137	8	76	45,659	7,022,300	645	866	− 25	402	35	208	143,252	20,077,100	18,895,000	+ 6
Corpus Christi Area	88	58	5	25	30,855	.....	263	346	− 24	171	17	75	98,186	.....	.....	....
Laredo Area	91	57	3	31	13,274	.....	271	421	− 36	171	16	84	38,417	.....	.....	....
San Antonio Area	42	22	....	20	1,530	.....	111	99	+ 12	60	2	49	6,649	.....	.....	....
Texas Gulf Coast	111	84	5	22	37,519	6,175,200	359	292	+ 23	279	13	67	117,220	17,320,350	17,300,500	− 0
Texas Panhandle	46	36	9	1	15,859	2,091,800	190	144	+ 32	144	35	11	63,403	6,014,350	6,554,600	− 8
West Texas	172	149	2	21	137,237	5,803,500	606	580	+ 4	514	6	86	432,917	16,759,200	16,894,450	− 0.8
West Central Texas	27	11	1	15	627	852,250	63	97	− 35	21	3	39	2,188	2,578,100	2,927,700	−12
Wyoming	9	4	4	1	7,874	1,543,900	19	24	− 21	9	7	3	9,914	4,366,250	4,511,400	− 3
Total United States	1,804	1,242	147	415	1,534,120	105,083,500	5,960	5,970	− 0.2	4,049	536	1,375	4,828,216	304,975,450	295,663,400	+ 3.1

* March completions cover not the calendar month, but the four weeks, or 28 days, ended March 26.

The Pressure Production Relationship IN THE EAST TEXAS FIELD

By STUART E. BUCKLEY
Humble Oil & Refining Co.,
Houston, Texas

INTEREST in the relation between the reservoir pressure and production rate in the East Texas field has received an added impetus from the recently accelerated pressure decline. This paper describes the manner in which the reservoir pressure depends upon both time and production rate and outlines certain approximations concerning the pressure decline which may be deduced from a mathematical analysis of the water drive. The possible effect of unrestricted water production on the reservoir pressure, the future flowing life, and the ultimate recovery from the field are discussed.

This paper was presented at the Spring Meeting of the Southwestern District, A.P.I. Division of Production, Fort Worth, Texas, March 24-25, 1938.

The statements and opinions expressed herein are those of the author, and should not be construed as an official action or opinion of the Institute or of this journal.

THE rate of decline of the reservoir pressure of the East Texas field was accelerated during the year 1937, reviving interest in the relation between the reservoir pressure and the rate of withdrawal from the field, and arousing renewed speculation in regard to the possible future behavior of the reservoir. The subject is one of importance not only to the operators, but to the public as well, due to the possible effects of too precipitate a decline of the pressure both upon lifting costs and upon the ultimate recovery of oil.

The majority of the students of the problem have long since recognized that the reservoir energy has been derived principally from a water drive originating in the Woodbine sand. The energy removed from the reservoir by oil withdrawals is continuously replaced by water encroaching from regions of greater pressure further west. The reservoir pressure, as a measure of the net energy remaining in the reservoir at any time, depends upon the balance maintained between the rate of energy removal in the form of fluid withdrawal and the rate at which energy is supplied by water influx.

The mechanism of the water encroachment has been explained by Schilthuis and Hurst[1], who presented a mathematical analysis of the relation between the reservoir pressure and the rate of water influx across the boundaries of the field. A somewhat different mathematical treatment based upon the same fundamental principles was offered by Muskat.[2] The additional data acquired during the time since these analyses were first published have made it possible to evaluate the strength of the water drive to a degree of precision which permits a reliable calculation of the reservoir behavior under any probable condition of operation.

The purpose of this paper is not to elaborate upon the mathematical treatment of the problem nor upon the detailed calculations of the reservoir pressure decline, but rather, with such an analysis as a background, to portray certain readily apparent generalizations concerning the relation between reservoir pressure and rate of withdrawal. Moreover, concerning the effect of water production on the probable future decline of the reservoir pressure, conclusions are drawn which it is hoped may serve to emphasize the importance of restriction of the rate of water production.

The Mechanism of the East Texas Water Drive and its Mathematical Evaluation

Subsurface samples[3] of the reservoir fluid have shown that the East Texas oil was originally undersaturated with gas, the saturation pressure averaging 740 pounds per square inch gauge at the reservoir temperature. The oil originally existed, however, at a pressure of approximately 1625 pounds per square inch, measured at 3300 feet subsea. This excess pressure was hydrostatic, transmitted to the oil by water from the Woodbine sand, the magnitude of the pressure being derived from the differences in elevation between the Woodbine outcrop and the oil reservoir.

Due to the slight compressibility[3] of the undersaturated oil (0.1 per cent per 100 pounds per square inch), it would have been impossible for expansion of the oil in place to have maintained the reservoir pressure above the saturation pressure for longer than the first few months of operation. The production of large quantities of oil with only slight decline in pressure indicated, therefore, the existence of an effective source of energy outside of the oil itself. The only tenable explanation was that the oil was being maintained in a compressed state by the same source from which the pressure was originally derived, that is by the influx of water from the body of the Woodbine sand into the original confines of the oil reservoir.

This situation was fortunate. In

[1] Schilthuis and Hurst, "Variations in Reservoir Pressure in the East Texas Field," Trans. A.I.M.E., Vol. 114 (1935).

[2] Muskat, "The Flow of Compressible Fluids Through Porous Media and Some Problems in Heat Conduction," Physics, Vol. 5, p. 71 (1934).

[3] Lindsly, "A Study of Bottom-hole Samples of East Texas Crude Oil," U. S. Bureau of Mines R. I. 3212 (1933).

[1] Schilthuis and Hurst, loc. cit.

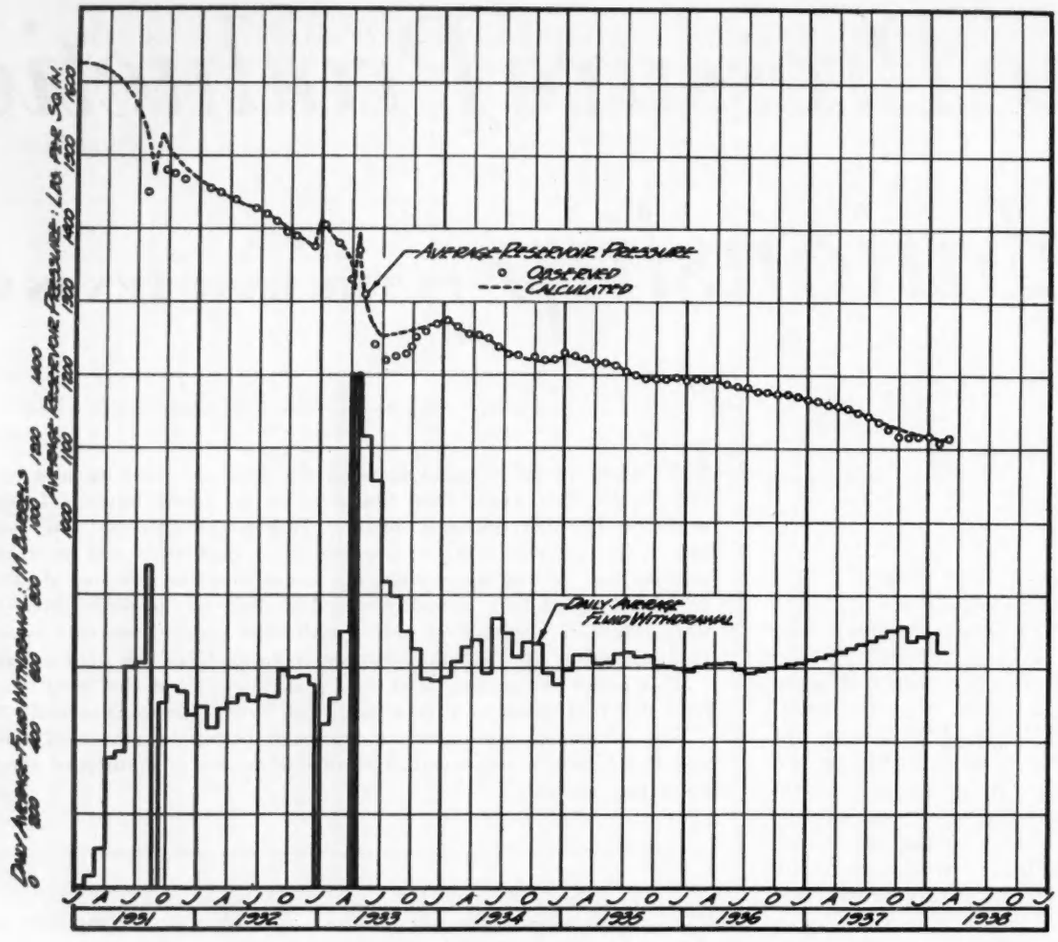


FIGURE 1
Reservoir pressure and fluid withdrawal—East Texas field.

the first place, it has made possible the production of large quantities of oil at an economical pressure level in an efficient manner. In the second place, the laws governing the movement of homogeneous fluids through porous media are sufficiently well known to permit evaluation of the strength of the water drive and to derive still further benefits from its effective control.

In brief, the water moves into the field in the following manner: The water in the Woodbine sand was originally compressed just as the oil in the reservoir was compressed. Although water has a smaller compressibility than has the undersaturated oil, the tremendous quantity of water present is able to expand appreciably with slight pressure reduction. The pressure decline incident to the withdrawal of oil from the reservoir is transmitted to the water outside of the reservoir, causing it to expand and fill the space vacated by the oil. As the expansion, and consequently the volume of water entering the reservoir, is proportional to the pressure decline, it is obvious that a definite relation must exist between the pressure and the rate of water influx. Since this water merely replaces the oil, the same relation must link the reservoir pressure with fluid withdrawals. The pressure decline transmitted to the water nearest to the field is in turn transmitted through the water progressively further out in the sand west of the field, the course of the pressure gradients depending upon the time which they have had to be established. An equation is necessary, therefore, which involves not only rate of withdrawal and the physical characteristics of the sand and of the water but which contains in addition some function of time.

Hurst's[1] equation fulfills these conditions. In its final form, with adjustments made to fit the particular conditions encountered in East Texas, it is

$$0.4855\ HK\ [144\ (P_R - P)] = \int_{\log_{10}\frac{\alpha^2(\theta-\theta_1)}{a^2}}^{\log_{10}\frac{\alpha^2\theta}{a^2}} q_R(\theta')\ d\left\{\log_{10}\left[\frac{\alpha^2(\theta-\theta')}{a^2}\right]\right\} \int_0^1 e^{-\frac{(x'a)^2}{4\alpha^2(\theta-\theta')}}\ dx' + 1.54\ \overline{q_R}\sqrt{\frac{\alpha^2(\theta-\theta_1)}{a^2}}$$

Where:

P_R, original reservoir pressure, lbs./sq. in. ga.

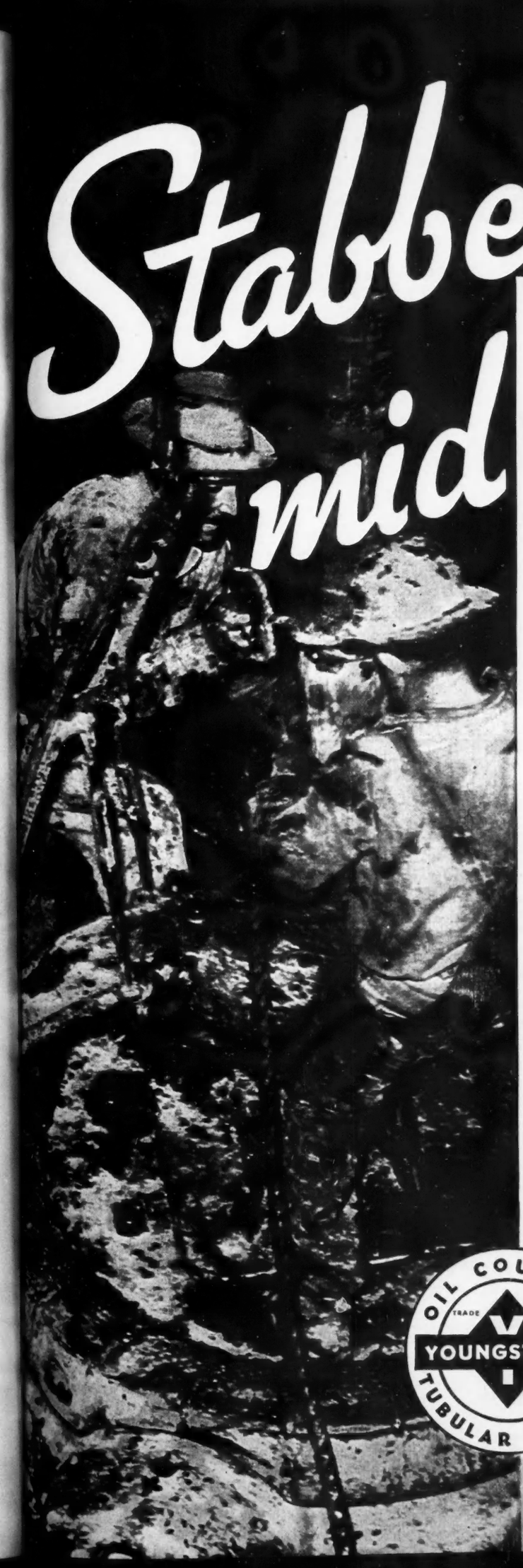
P, average reservoir pressure at any time, lbs./sq. in. ga.

q_R, production rate at any time, measured in the reservoir, bbl./day

K, average permeability of Woodbine sand, cu. ft./day/sq. ft./lb./sq. ft./ft.

c, effective compressibility of wa-

Stabbed at midnight!



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ter in Woodbine sand, cu. ft/cu. ft./lb./sq. ft.

ϕ, fractional porosity

Θ, time, days

α^2, ratio, $\frac{K}{\phi c}$

a, half length of field, ft.

x, distance along north-south axis of field

q_R, constant rate of withdrawal prevailing from Θ_1 to Θ

The constants **c** and **K** were calculated from the recorded data on reservoir pressure and withdrawal from 1932 through 1938 to be 1.1077×10^{-7} cu. ft. per cu. ft. per lb. per sq. ft. and 0.1170 cu. ft. per day per sq. ft, per lb. per sq. ft. per ft, respectively. The following values were used for the remaining constants:

$\alpha^2 = 5.2812 \times 10^6$
$a^2 = 1.2295 \times 10^{10}$ sq. ft.
$H = 200$ ft.
$\phi = 0.20$

$$q_R = \frac{\text{bbls. oil per day}}{0.79} + \text{bbls. water per day}$$

Using this equation with the constants given, the reservoir pressure of the East Texas field was calculated from the withdrawals throughout the history of the field. The results are presented graphically in Figure 1, which shows both the observed and calculated pressures and the rate of fluid withdrawal (both oil and water) as measured in the reservoir. The accuracy with which it is possible to calculate the reservoir pressure throughout the irregular production history of the field justifies the concept of the mechanism of the water drive. Moreover, it demonstrates the precision with which it is possible to determine the strength of the water drive and the validity of the equation as a basis both for extrapolation into the future and for portrayal of the possible behavior of the reservoir under rates of withdrawal different from those which have been actually in effect.

The Reservoir Pressure Decline at Constant Withdrawal Rate

The relation between the reservoir pressure and instantaneous withdrawal rate is somewhat complex, the pressure depending not only upon the rate of withdrawal at any particular time but also upon the integrated effect of the entire production history. For example, at a constant rate of production of 400,000 barrels per day, the pressure may rise or fall, or may rise initially and later fall, depending upon whether the rate of production has been recently restricted or increased. The continuous pressure fluctuations attending changing rates of production are significant in that they are manifestations of shifts in the balance between withdrawal and water influx. The magnitude of these variations can be foretold only through detailed calculations.

The problem may be simplified, however, and removed somewhat from its enshrouding haze of mathematics by a consideration of the pressure decline under the hypothetical condition of constant rate of withdrawal prevailing from the beginning of production. Mathematically, this condition removes withdrawal rate from its position as a variable under the integral and

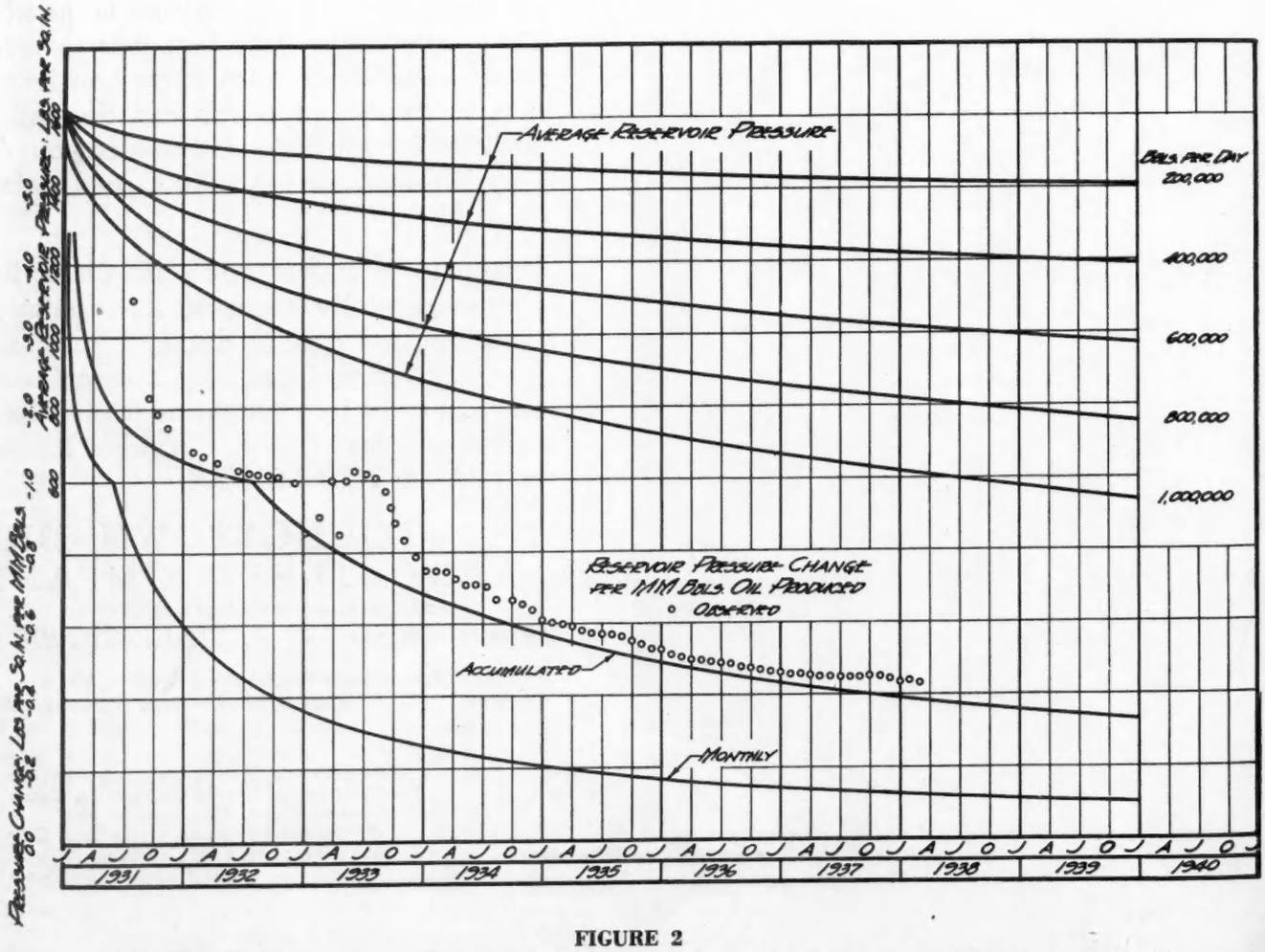

FIGURE 2
Calculated change of reservoir pressure with time at constant production rate—East Texas field.

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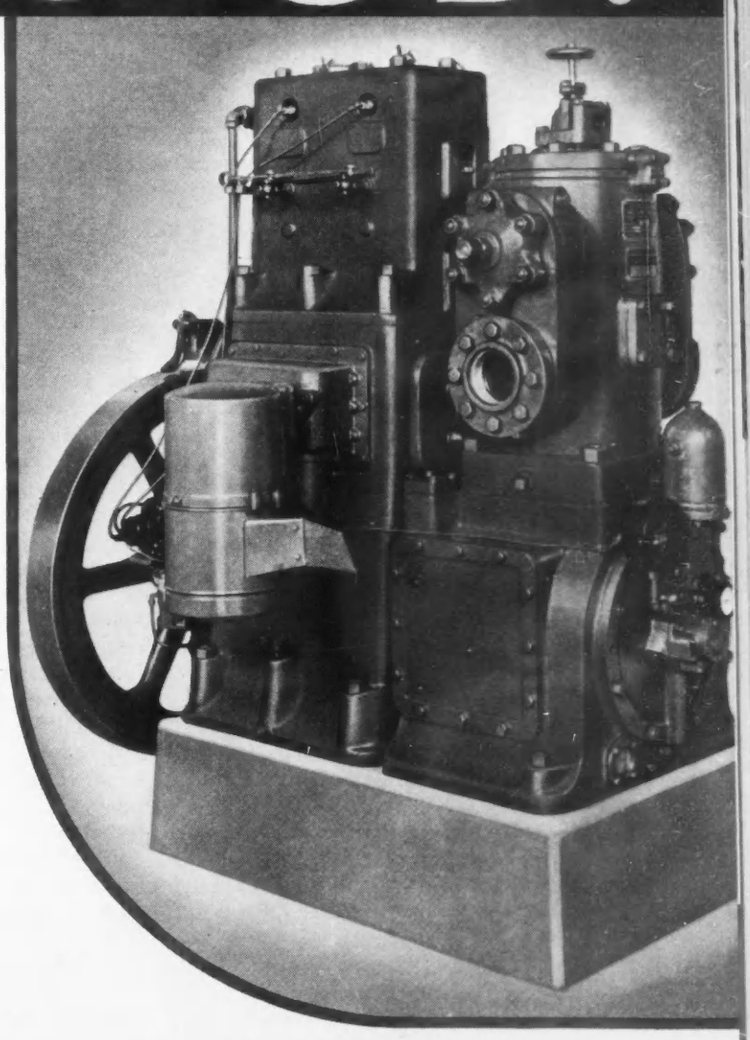

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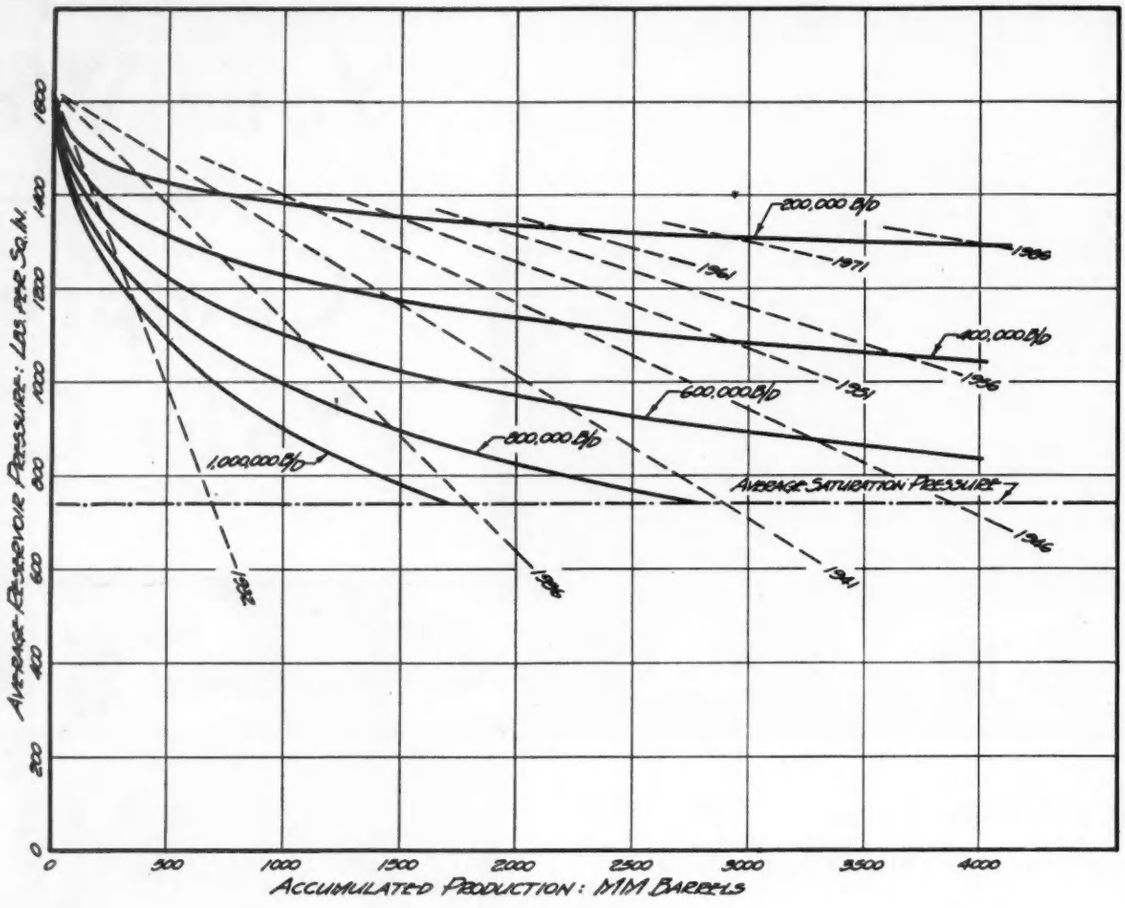

FIGURE 3

Calculated reservoir pressure and accumulated production at constant production rate—East Texas field.

places it outside, leaving merely the time relation as a variable. The equation simply shows then that the total decline from the original reservoir pressure would at any time be directly proportional to the constant production rate which had prevailed up to that time and therefore to the total quantity of oil which had been produced up until that time. In other words, the pressure decline per million barrels of oil produced up to any given time would be independent of the rate of production and be fixed by the time only.

The decline of the reservoir pressure with time has been calculated for constant production rates of 200,000; 400,000; 600,000; 800,000, and 1,000,000 barrels of oil per day with no water production, assuming production at each rate to have begun January 1, 1931. The results are presented in Figure 2, which shows also both the accumulated pressure change per million barrels of total oil produced and the monthly change in pressure per million barrels of oil produced during the month.

These curves may be considered as the normals toward which the reservoir pressure will trend over any prolonged period of substantially constant rate of production. As such they may serve as a useful approximate guide for estimating the behavior of the reservoir at any time. The degree to which they are approached depends upon how well the various rates at which fluid has been withdrawn will average out at any time. This approach is shown in Figure 2 by the points representing the observed accumulated decline in reservoir pressure per million barrels of total oil produced. The fluctuations due to variable rate have tended to iron out to such an extent that the observed pressure decline follows closely the trend calculated for constant rate.

The possibility of producing more oil at a higher average pressure level at lower rates of production is obvious from these curves. For example, at constant rate there would be a decline of 1.3 pounds per square inch for every million barrels of oil removed during the first year, whereas the decline would have amounted to only 0.3 pound per square inch per million barrels had 10 years been required for the production of the same quantity of oil. This effect is shown more clearly in Figure 3, in which the calculated average reservoir pressure at various production rates is shown as a function of the accumulated production. At a production rate of 200,000 barrels per day, it would have been possible to produce all of the estimated ultimate quantity of oil at an average pressure exceeding 1300 pounds per square inch. Aside from a few in isolated areas, all wells would have flowed until the water percentage became too high, and substantially no free gas would ever have been liberated in the reservoir. Even at a production rate as high as 400,000 barrels per day, the average reservoir pressure would have remained indefinitely above 1000 pounds per square inch, resulting in flowing the major part of the ultimate production. At a rate of 1,000,000 barrels per day, on the other hand, the average pressure would have fallen below 1000 pounds per square inch at a total production of less than one billion barrels, and substantially the en-

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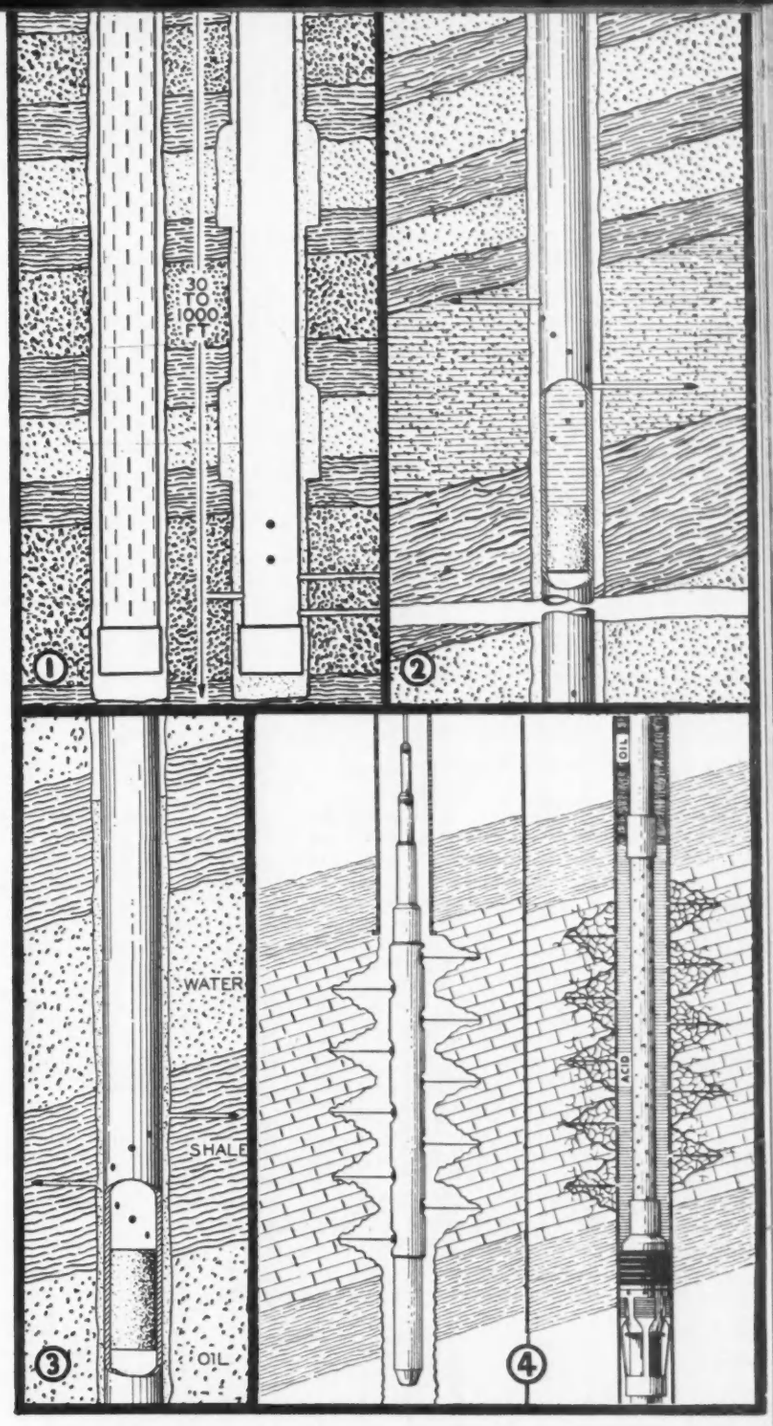

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tire field would have been on the pump in 1934.

The Effect of Variable Production Rate on the Reservoir Pressure

The effect on the reservoir pressure of a sudden change in production rate may be shown by a hypothetical case. It was assumed for illustration that the field had been produced at a constant rate of 600,000 barrels of oil per day until January 1, 1936, by which time the reservoir pressure would have declined to 1084 pounds per square inch. The pressures were then calculated for the next four years for rates of production after January 1, 1936, of 0; 200,000; 400,000; 800,000, and 1,000,000 barrels per day. The results are presented graphically in Figure 4. The calculations indicated that, under the assumed conditions, if the field had been shut in on January 1, 1936, the pressure would have risen 80 pounds per square inch during the first month following, and a total of 390 pounds per square inch during the following four years. At a rate of 800,000 barrels per day after January 1, 1936, the pressure would have fallen 30 pounds per square inch during the first month to approximately 810 pounds per square inch by January 1, 1940. At each rate, the trend would have been toward the normal decline curve calculated for that particular rate under the assumption of constant rate from the beginning of production. These normal decline curves

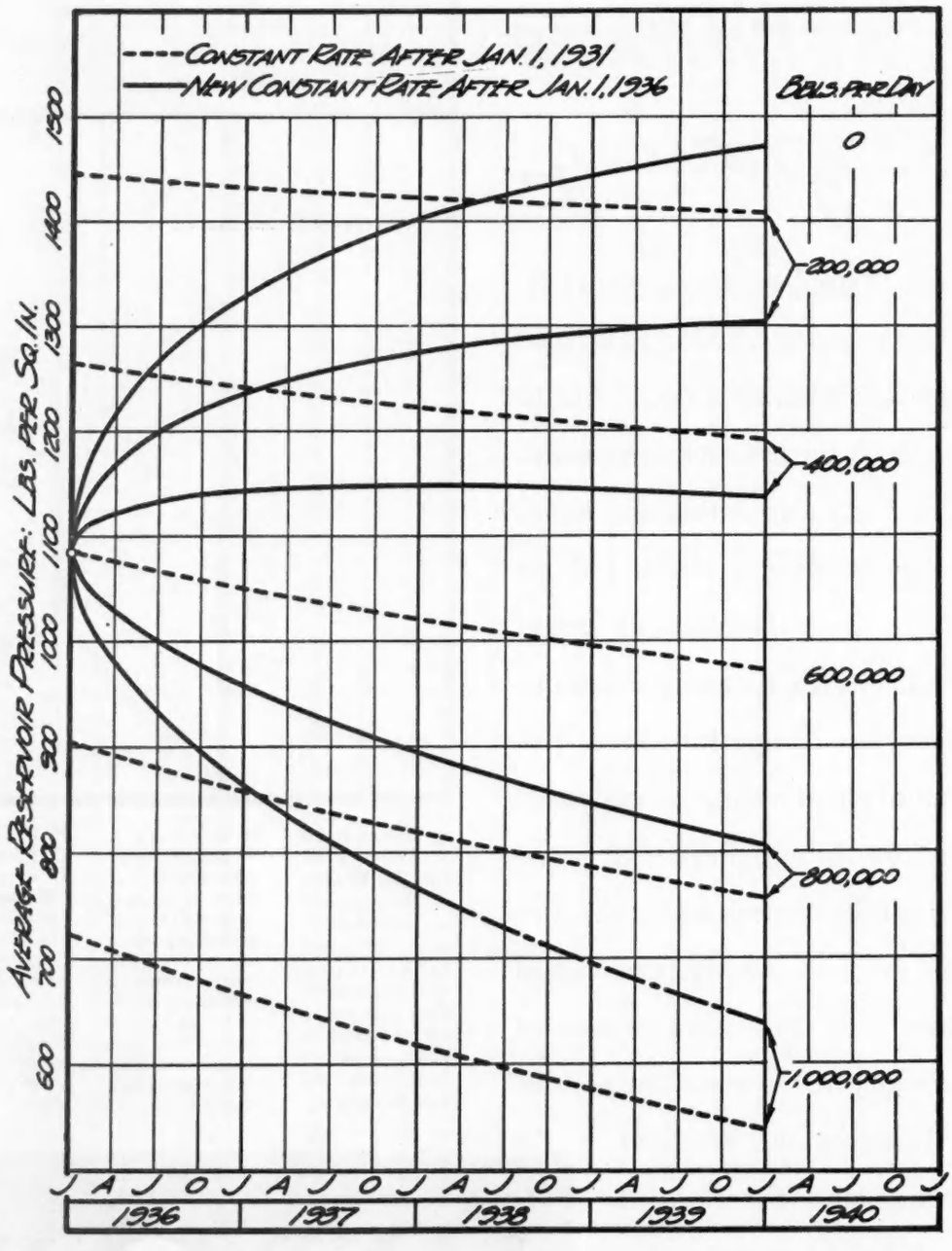

FIGURE 4
Calculated effect of variation of production rate on reservoir pressures—East Texas field.

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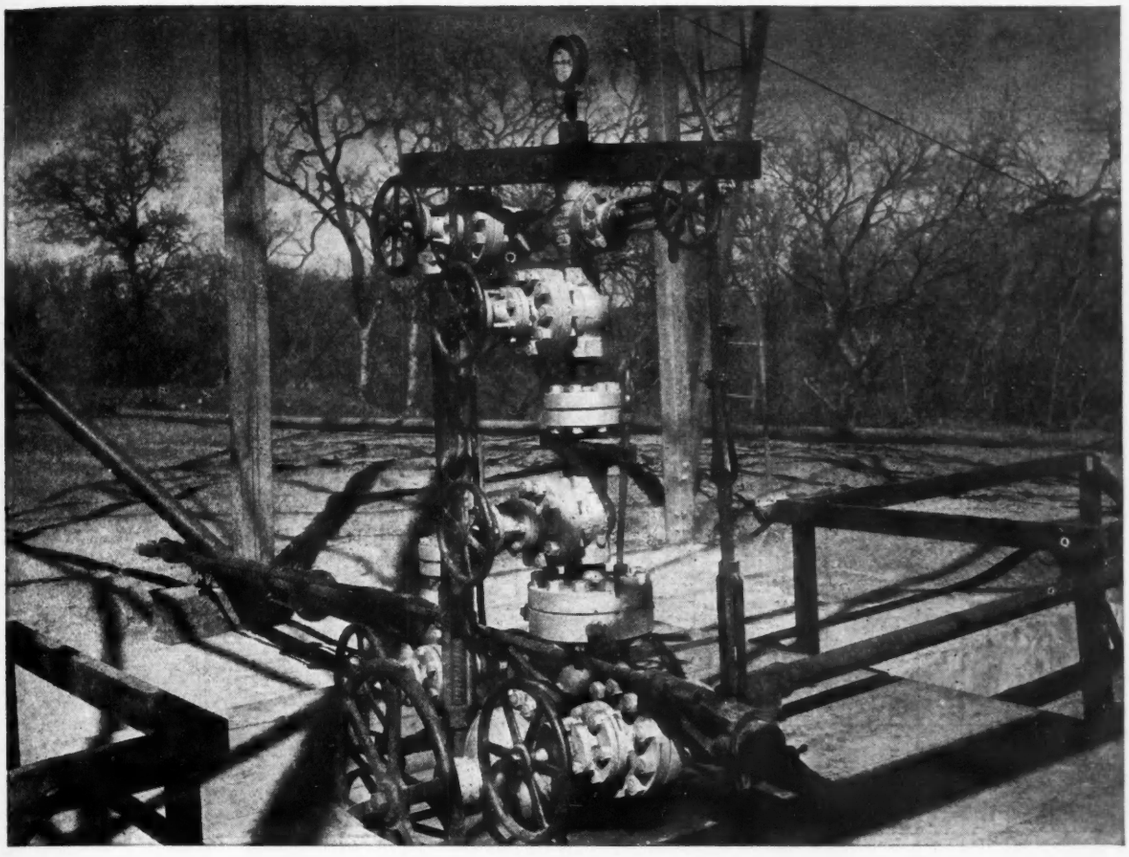

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are shown as the light dashed lines in Figure 4.

The return at the new rate of production to the normal decline curve is illustrated in a different manner in Figure 5, which shows the calculated accumulated change in reservoir pressure per million barrels of total oil produced. At each new rate, the disturbance caused by the sudden change on January 1, 1936, would be quickly ironed out, resulting in an offset in the decline curve, after which it would follow the normal trend (that for constant rate from the beginning of production, illustrated in this case by a continuation of the curve for a rate of 600,000 barrels per day).

The violent pressure fluctuations immediately following a change in the rate of production are indicated more strikingly in Figure 6, which shows the monthly change in reservoir pressure per million barrels of oil produced. During the first month following reduction of the rate to 200,000 barrels per day, the pressure would have risen 8.4 pounds per square inch during January, the rate of change decelerating rapidly as the normal decline curve was approached.

The immediate and sensitive response of the reservoir pressure to change in the rate of withdrawal is readily apparent from these curves. They serve to explain in part the fluctuating course of the observed pressure decline.

The Effect of Water Production On the Reservoir Pressure

It is possible to calculate the reservoir pressure of the East Texas field at any time because of two facts:

1. The relation between pressure, time, and the rate of water influx across the boundaries of the field has been determined.
2. Due to the slight expansibility of the undersaturated oil, the oil produced is replaced by the water moving in.

Every barrel of water removed from the reservoir must also be replaced by additional water influx from the Woodbine sand to the west. The increased rate of water influx can be obtained only at lower reservoir pressure; therefore the production of water results in additional pressure reduction. The effect of water production on the pressure can be calculated in the same manner as can the effect of oil withdrawal. (Because there is no shrinkage attending the removal of water from the reservoir, one barrel of water is equivalent in displacement as measured in the reservoir to 0.79 barrel of oil as measured in the stock tank).

Until the beginning of 1937, the pounds per square inch per million barrels, followed by a gradually decreasing rate of pressure build-up. At 400,000 barrels per day, the pressure would have risen 2 pounds per square inch per million barrels during January, 1936, continued its rise at a decreasing rate until November, 1937, and thereafter declined at an accelerating rate. At a rate of 1,000,000 barrels per day, the pressure would have fallen 1.8

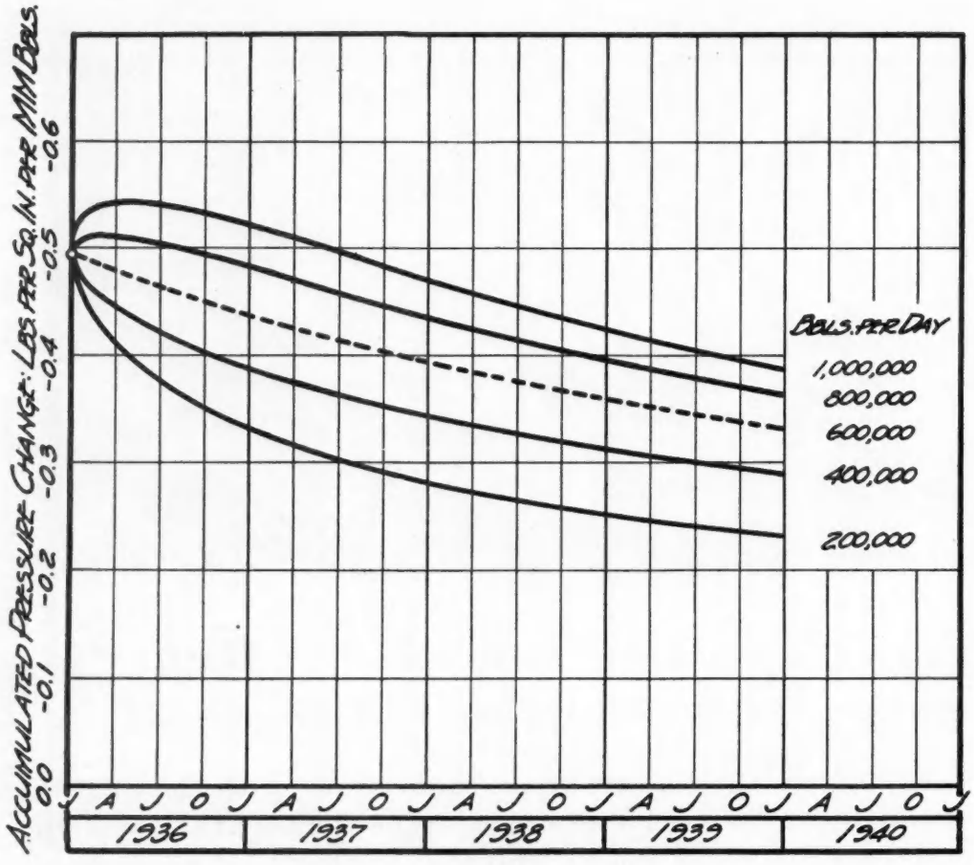

FIGURE 5

Calculated effect of variation of production rate on accumulated reservoir pressure changes—East Texas field.

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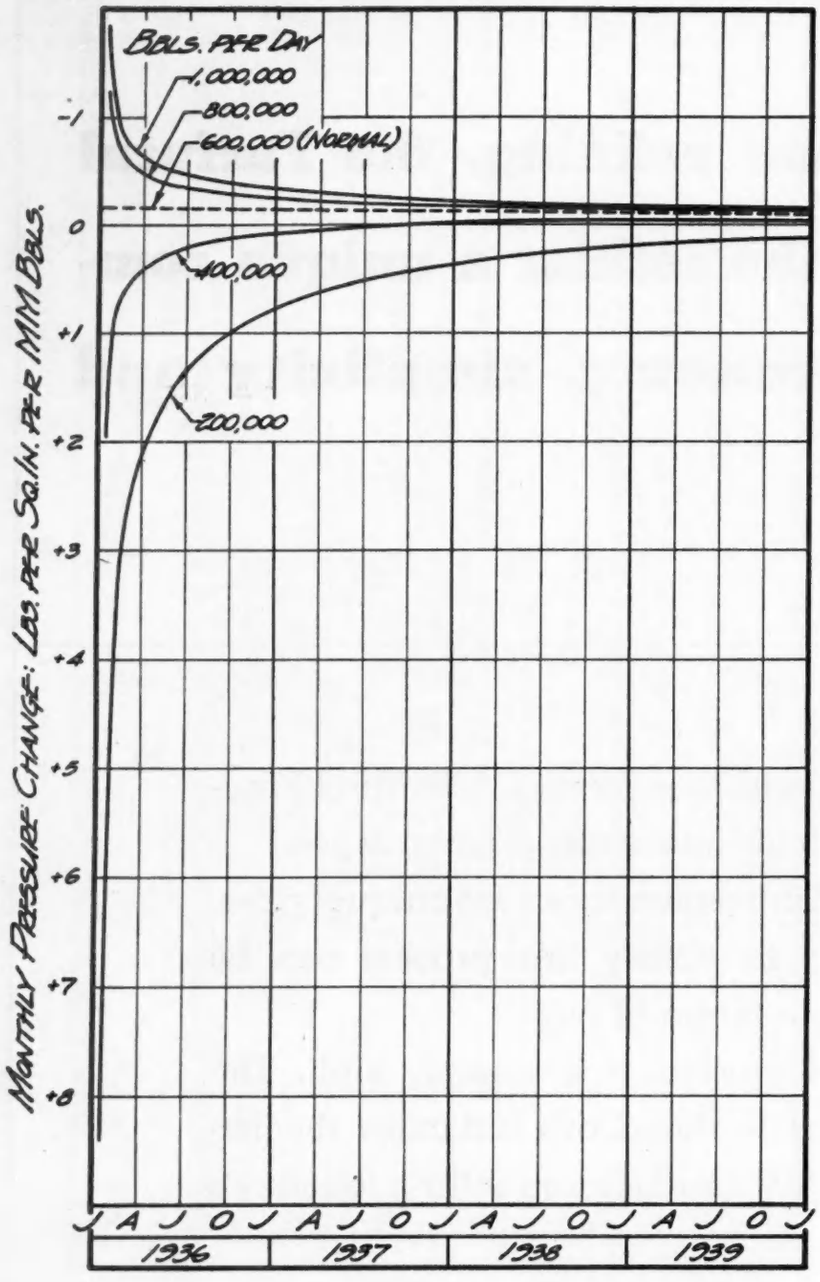


FIGURE 6

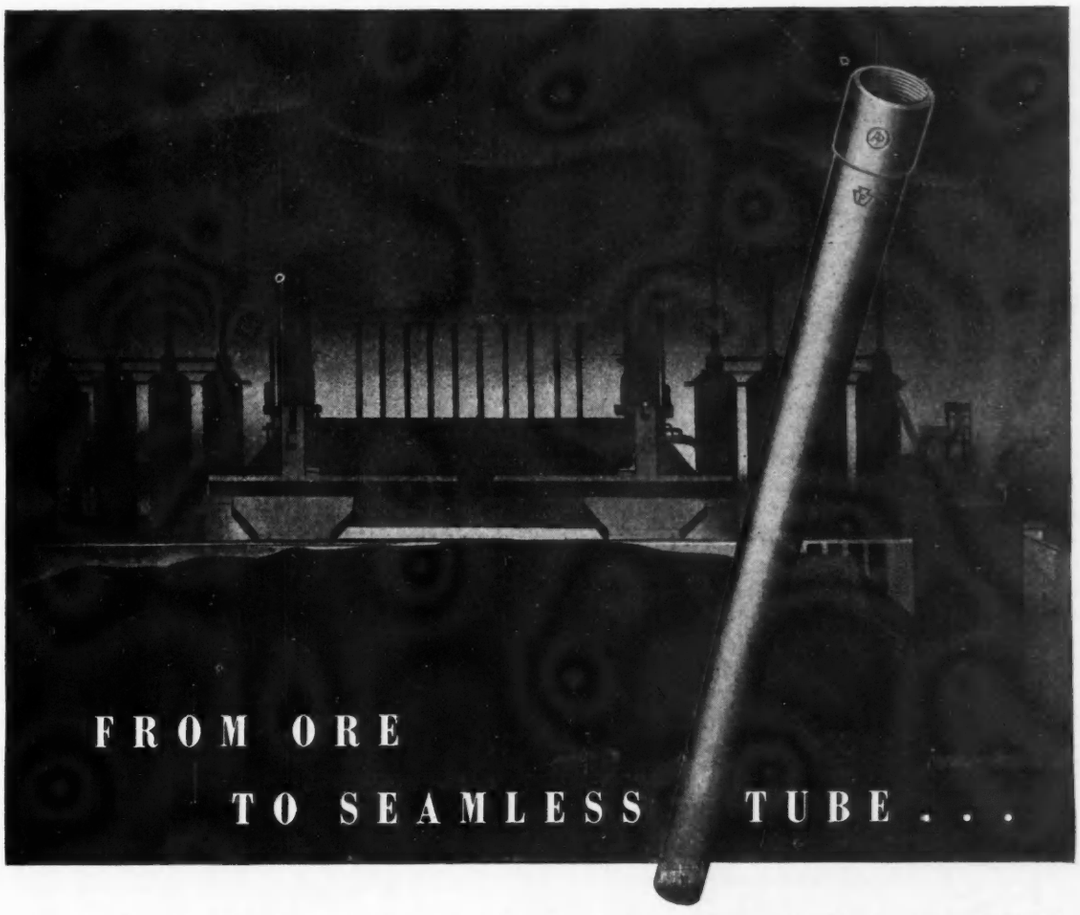
Calculated effect of variation of production rate on monthly reservoir pressure changes—East Texas field.

production of water had not been sufficient to materially affect the reservoir pressure decline, the calculated effect on January 1, 1937, being but 15 pounds per square inch. By January 1, 1938, however, the production of water had contributed a total of 40 pounds per square inch to the reservoir pressure decline. The pressure during the year 1937 actually declined a total of 49 pounds per square inch, whereas the oil withdrawals alone would have reduced it but 24 pounds per square inch.

The rate of water production has increased since June, 1935, in a regular semi-logarithmic manner with time. *Should the future rate of increase follow the same trend, then the entire benefits expected to be obtained through restricted rates of oil production are in danger of being obliterated during the next two years.*

Calculations made on the supposition that the rate of water production might increase during the next two years in the manner indicated showed that with a daily oil allowable of 500,000 barrels after April 1, 1938, the reservoir pressure would decline to 1030 pounds per square inch by January 1, 1939, and to 870 pounds per square inch by January 1, 1940. Figure 7 shows the supposed rates of water production and the calculated resulting pressure decline. It shows in addition what the pressure decline would be with a daily oil production of 500,000 barrels if no water were to be produced after April 1, 1938. *It is indicated that the supposed increased rate of water production would lower the pressure more in the next two years than the oil production alone would lower it during the remainder of the life of the field.*

The effect of the water production on the future flowing life of the field is plain. Regardless of the minimum flowing pressure, the rate of pressure decline would be so rapid that substantially no flowing production would be obtained after the first of 1940, at which time the total oil production would be approximately one and one-half billion barrels. In the absence of any water production, the reservoir



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pressure would remain above 1000 pounds per square inch until January, 1946, by which time a total of approximately 2,600,000,000 barrels of oil would have been produced, or an additional 1,100,000,000 barrels after January, 1940. If it be assumed that only 65 per cent of this additonal oil obtained at a pressure above 1000 pounds per square inch would actually flow, there would still be the net loss of having to pump more than 700 million barrels that could have been produced during the next 8 years by natural flow. This loss would result directly from the production during the next two years of a mere 230 million barrels of water. *Every barrel of water produced would therefore exact a sizeable economic toll, neglecting entirely the additional costs which would be entailed to dispose of this water.*

Examined from the standpoint of ultimate recovery, the possible loss resulting from unrestricted water production is even greater. Data have been accumulated which indicate that the flooding efficiency of a water drive may be decreased by as much as 75 per cent even in a perfectly uniform sand if the pressure on the oil be allowed to fall materially below the saturation pressure prior to the advance of the water. In a non-uniform sand, this effect may be even greater. With the supposed rate of water production, the average reservoir pressure will have declined to 740 pounds per square inch, the average saturation pressure of the oil, by early in 1940. Actually free gas would be evolved in the reservoir on a wide scale at a pressure of approximately 800 pounds per square inch, due to two causes:

1. The average reservoir pressure is referred to a datum plane of 3300 feet subsea, near the base of the oil zone. The pressure at the top of the oil zone, as much as 100 feet to 200 feet higher on the east side, is around 50 pounds per square inch lower.

2. The eastern part of the field is under a lower than average pressure due to the pressure gradients across the field.

The ultimate recovery from the East Texas field has been variously estimated at between 3 and 4 billion barrels. With free gas extensively liberated in the reservoir in 1940 at a total production of only 1½ billion barrels, a loss of 25 per cent of the remaining ultimate production would total between 350 million and 625 million barrels, directly attributable to the rate of water production, a quantity of oil greater than the combined total production of the Spindletop, Humble, and Powell fields.

It is by no means certain that the rate of water production will actually increase in the manner chosen for illustration. It is very probable, however, that in the absence of restraint, the rate will actually reach and perhaps surpass a million barrels a day. The only question is one of the time required for it to reach such proportions.

The magnitude of the possible losses resulting from continued water production should focus the attention of every operator in the field on the problem of its restriction. Whatever remedial measures may be undertaken should be inaugurated before damage to the reservoir has progressed to the point at which it will be irreparable.

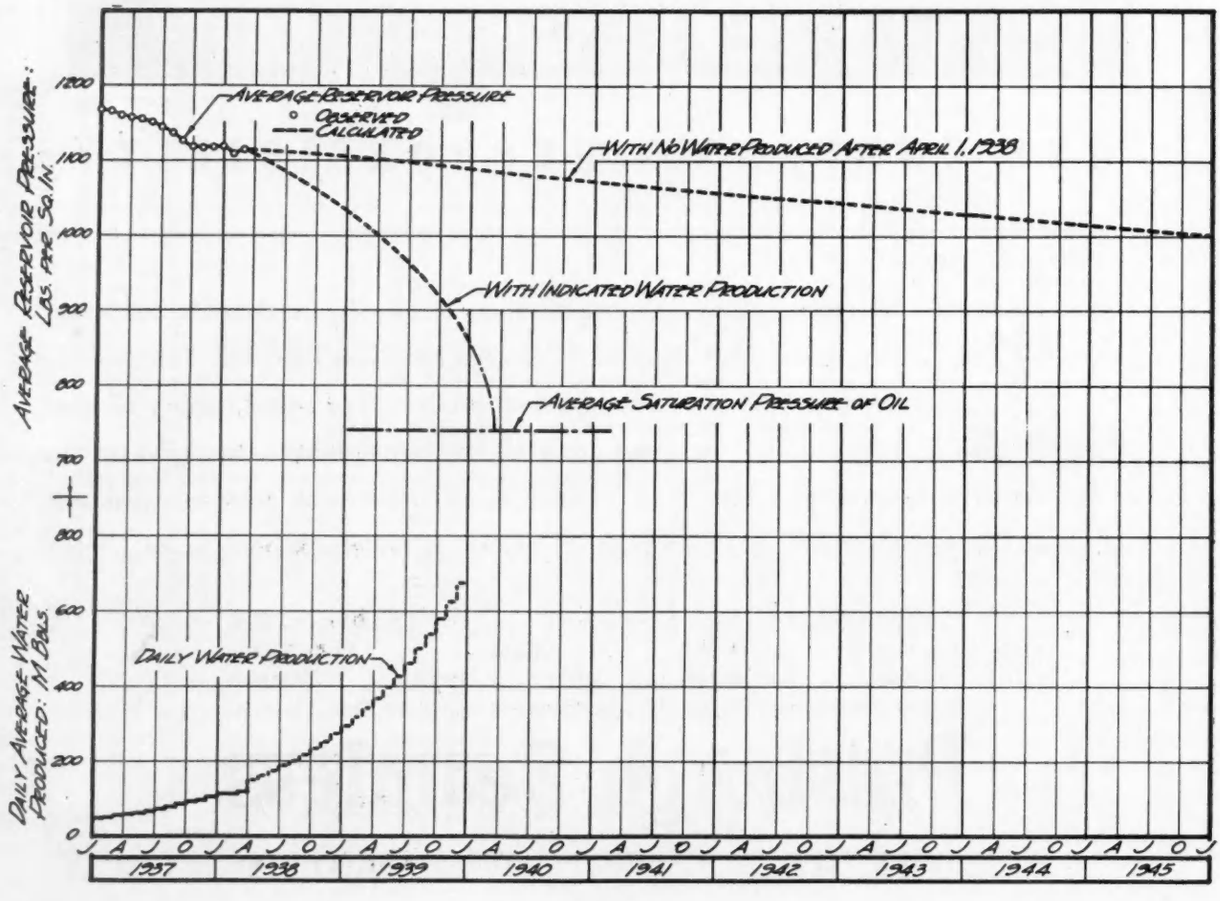

FIGURE 7

Calculated effect of water production on reservoir pressure—East Texas field.

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New Methods in Fishing for Tubing

By JOE CHASTAIN

THE job most feared in the production department is fishing for stuck tubing or tubing catchers. Many times this job proves to be long and tedious, as well as expensive. In the past, superintendents had standard tools to perform the work. But recently some new methods have been devised, one of which is described in the following paragraphs and accompanying photographs.

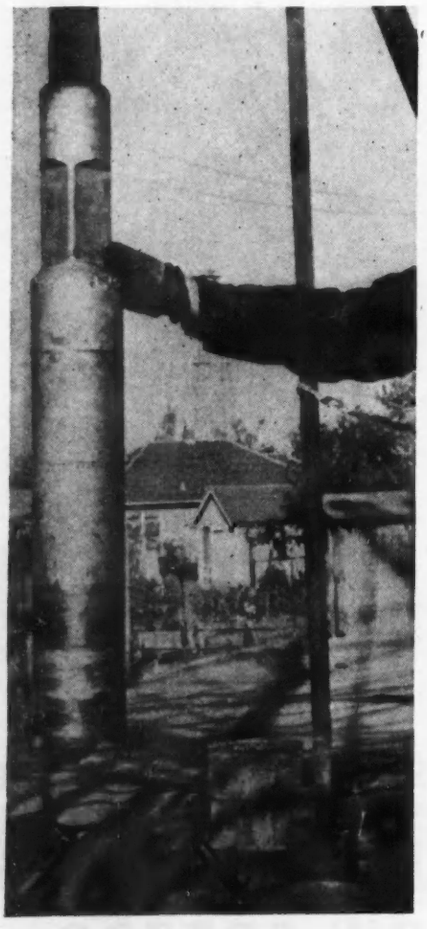

FIGURE 1 (Left)

Bulldog overshot, which is hollow to allow passage over 2½-inch tools.

In the particular instance discussed here, the well was 6486 feet deep, with the catcher set at 5200 feet. There were approximately 50 feet of fluid in the bottom of the well.

The job started when a pump sanded up and quit pumping. Fortunately, there was an "on and off," or releasing, tool in the string of rods near the pump which was released when the pump could not be pulled. This allowed the rods to be pulled, preventing a so-called "stripping job." However, it was necessary to pull the tubing to recover the pump. On this particular job, the tubing did not extend high enough for the elevators to latch under the coupling, necessitating a "pick-up" nipple to be screwed into the top joint. Someone, perhaps the driver, who had no business on the floor, screwed this "pick-up" nipple into the top coupling and then forgot to tighten it with the tongs. Consequently, when the tubing was picked up to put on the spider, the threads stripped off the "pick-up" nipple and dropped the 6480 feet of 2½-inch tubing about 5 feet. The tubing catcher caught the bottom and the tubing head caught the top of the tubing, but the excessive weight caused the catcher to hang so that it could not be pulled.

The tubing was worked up and down until they dared to pull 100,000 pounds, at which time the tubing parted above the catcher. Perhaps this had loosened the catch, so an overshot was run to catch the tubing. It appeared that the tubing was tighter than ever and

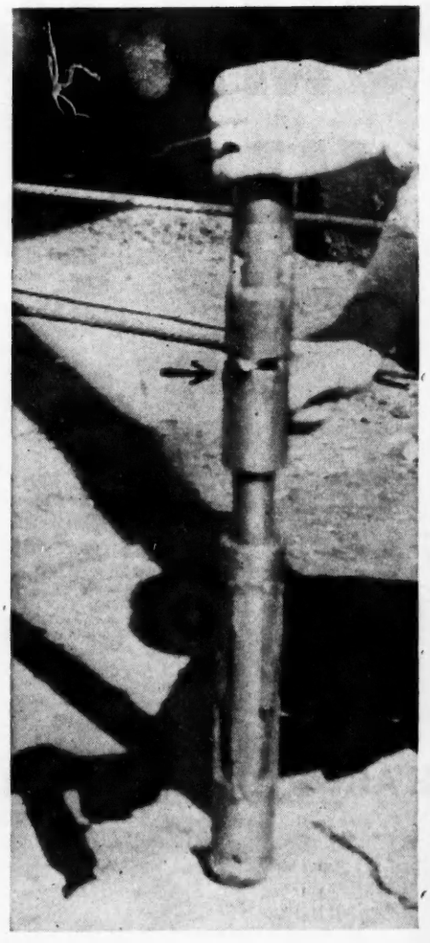

FIGURE 2 (Right)

Inside cutter to cut tubing. Arrow points to one of cutters.

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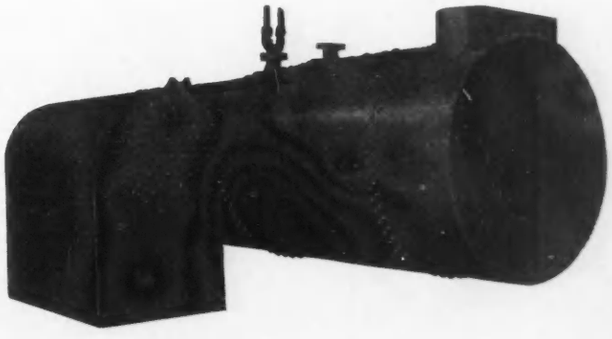

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FIGURE 3

Starting in hole with cutter tool. Cutter can be seen in place about one inch above tubing coupling.

that it would be useless to continue. By taking a tension in the tubing they were able to unscrew below the overshot and come out of the hole.

A "bulldog" overshot fishing tool, which was hollow, was then run to catch hold of the tubing in the hole. The overshot, Figure 1, being hollow, allowed tools up to 2½ inches in diameter to pass through, such as the cutter and rods, and also to guide the cutter into the lower tubing. As soon as the overshot was tested to see how good the hold was, a considerable tension was taken in the full string of tubing. This tension was to straighten out any joints that might be crooked to allow free passage of the rods, and to indicate, by a jump, when the tubing has been cut above the catcher.

Rod tools were strung up and the cutter started into the hole. To have rigidity in the rods the ⅞ were run on the bottom and the ¾ on the top.

FIGURE 4

Rotating the rods with a safety wrench.

The cutter, Figure 2, was similar to an internal casing cutter. The blade can be seen near the arrow in Figure 2, showing how it extends as the tubing is cut. There were three of these blades, made of a fine alloy.

Perhaps Figure 2 and Figure 3 will give some idea of the size and method of running the cutter.

The next step was to determine accurately where the tubing catcher was placed. Fortunately, a tally had been kept on this string of tubing and the cutter was placed approximately 50 feet below the catcher.

The cutter was tripped and the rods rotated as shown in Figure 4. The cut was made in 1 hour and 5 minutes. The tubing jumped, indicating either that the catcher was not hung or that the cut had been made above the catcher. It was later found that the catcher had been run two joints lower than the tally recorded and that the cut was made about 10 feet above the catcher.

This made it necessary to run an overshot, which had no slips, as a guide so that the cutter would pass through the tubing and catcher. There was no harm created by making the cut in the wrong place except in causing an extra round trip with the tubing and rods.

The second cut took a little longer than the first because the operator of the unit lowered the rods too far after cutting had started and had to be reset to start over. The attempted cut can be seen in Figure 7 on the inside of one of the lengths of tubing. However, the second cut was made in less than an hour and a half. The wheel was passed around, about as fast as a person would walk to turn the wheel, and one man can do it easily; nevertheless, it is tiresome.

After the rods and tubing were pulled, the blank overshot, or socket, was replaced by rotary automatic jars, a safety joint and a releasing overshot, or socket, Figures 5 and 6. It was easy to hook onto the fish and test the hold. The total load, before the socket was set, was 34,000 pounds. Tension was put in a torque movement by rotating the tubing a turn or two, to the right. The torque was overcome by pulling on the tubing, and by watching the weight indicator

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the results of this was seen. In this case the tubing was rotated until there was so much torque that it took 40,000 pounds tension to operate the jars. The weight indicator registered 74,000 pounds, which was 40,000 pounds more than the weight of the tubing run into the hole.

Tubing tongs were fastened to the tubing and to the derrick to hold the proper torque on the jars. With the tubing jarring on the catcher with jolt 40,000 pounds, it took 1 hour and 20 minutes to disengage the catcher. There were approximately 4 strokes per minute made by raising and lowering the tubing with the tubing unit.

FIGURE 5 (Above)
Automatic or rotary jars unscrewed after the fish was caught.

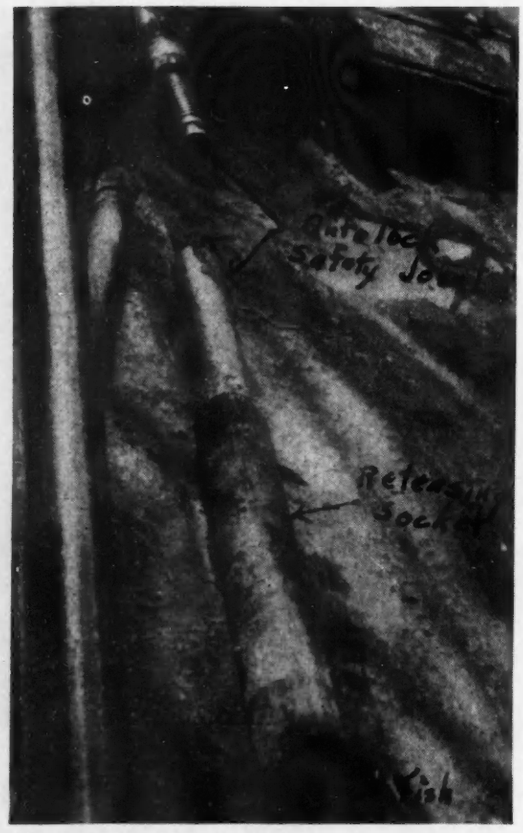


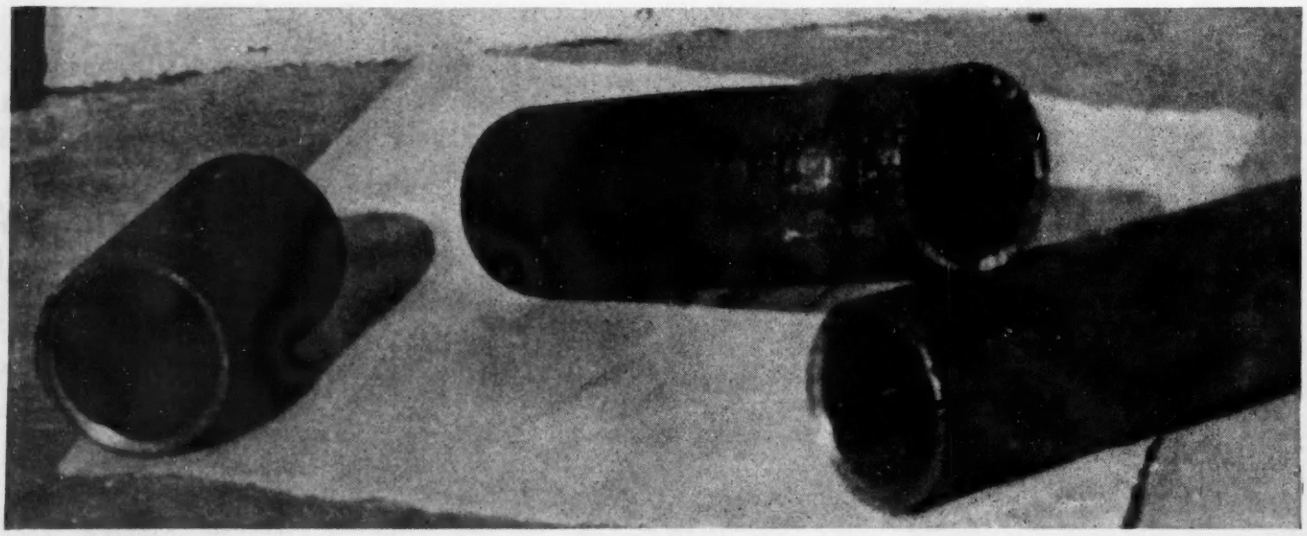
FIGURE 6 (Left)
Releasing overshot after it was on the ground.

FIGURE 7
Cuts made during the job.

As soon as the catcher came loose, there was no tension in the tubing, and the weight indicator recorded 35,000 pounds. This was practically the finish, but for the tubing below the catcher. It was easily picked up and pulled out.

This may seem like a long procedure, but the well was pumping again in approximately four days. This seems like an unusually short time for something of that nature and seriousness. The expense was not as high as everyone surmised, amounting to approximately $1600 for unit time, labor, rental of tools, and replacement of some damaged tubing.

In Figure 7 can be seen the smooth ends left by the cutter. One of the pieces, standing up, shows how abusive the work of the jars was, the piece being somewhat smaller in diameter, as a result of strain of pulling.



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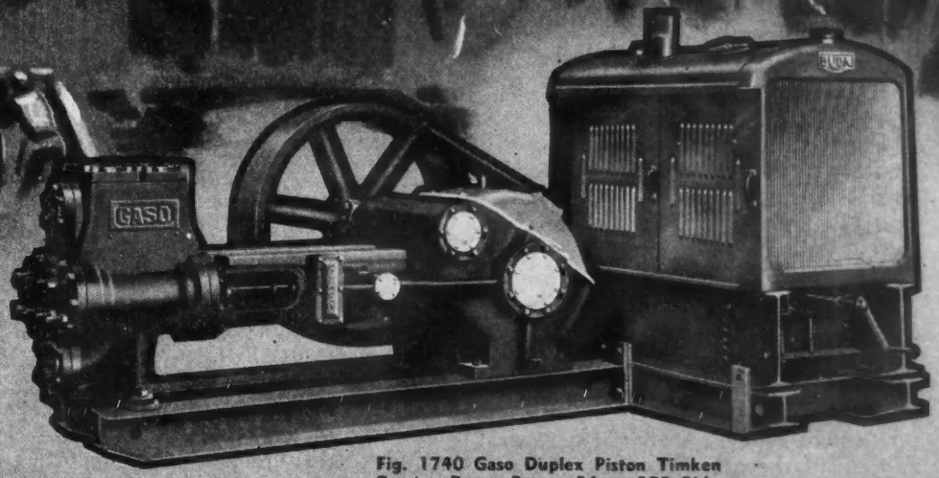

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How Much Crude Reserve Has U. S. S. R?

By L. DAVID WOSK, Petroleum Engineer

PART 5

THE organization of oil operations for the Soviet system differs greatly from that in the United States. The parent organization of the Azerbaijan area is called the Azerbaineft Trust. Under this master trust, which in turn reports to and is controlled by the Glavneft offices at Moscow (the control organization for all oil trusts in the U.S.S.R.) are the various subtrusts operating individual fields or minor districts of Azerbaijan. For example, Lenineft (operating the Surakhany pool), Stalineft (operating the Bibi-Eibat pool), Alatneft (operating Pirsagat), etc.

The organization structure of Azerbaineft is diagramatically presented herewith.

Geologist is Head

Function of the chief geologist and his assistants is that of directing all operations for wildcat areas and assuming responsibility for each sector. The district chief geologist and staff report to him.

Function of the operative department is as follows: This department receives complete instructions regarding the oil and gas horizons, water and special conditions, makes up drillers type logs and in general supervises the actual drilling operations of individual wells. The exploitation unit has a separate budgetary unit; plans general drilling, repairs and cleans out wells, develops and recommends special methods for prospecting and developing separate areas. Both the exploitation and operating units correspond generally to our production departments, but work very closely with the chief geologist of the district, whose function is more of a general manager with geological and engineering training, rather than strictly a geologist.

The planning and policy division studies and recommends the character and order of development of each horizon and each deposit as a whole. That is, the choice of horizon to be worked and the choice of structure to be exploited for development. In this connection, it must be noted that the Soviet plan

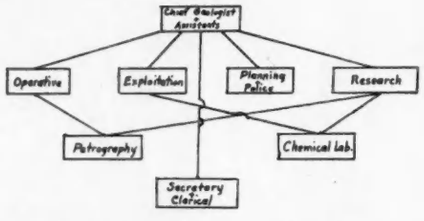


Diagram of organization structure of Azerbaineft.

of development differs from ours in that many structures may be mapped very thoroughly to determine the potential producing horizon as well as the type of structure. Then, several of each type for each horizon may be explored through drilling simultaneously. Prior to the pools' being put on production, many wells may be drilled to determine its general outline and potentialities. Then, and only then, would the field be turned over to the production department. Before the final operation, this planning board serves a most important function.

The research department's work is centralized. It studies the general tectonics of an area, conducts geophysical research, makes electrical resistance charts of wells, and reports and recommends to the chief geologist. In this work, it is assisted by two laboratories, the petrographic and chemical. These same laboratories also conduct special work for the operative and exploitation department.

In addition to the above, the chief geologist has a clerical staff functioning directly under him to assist in correlation of this work.

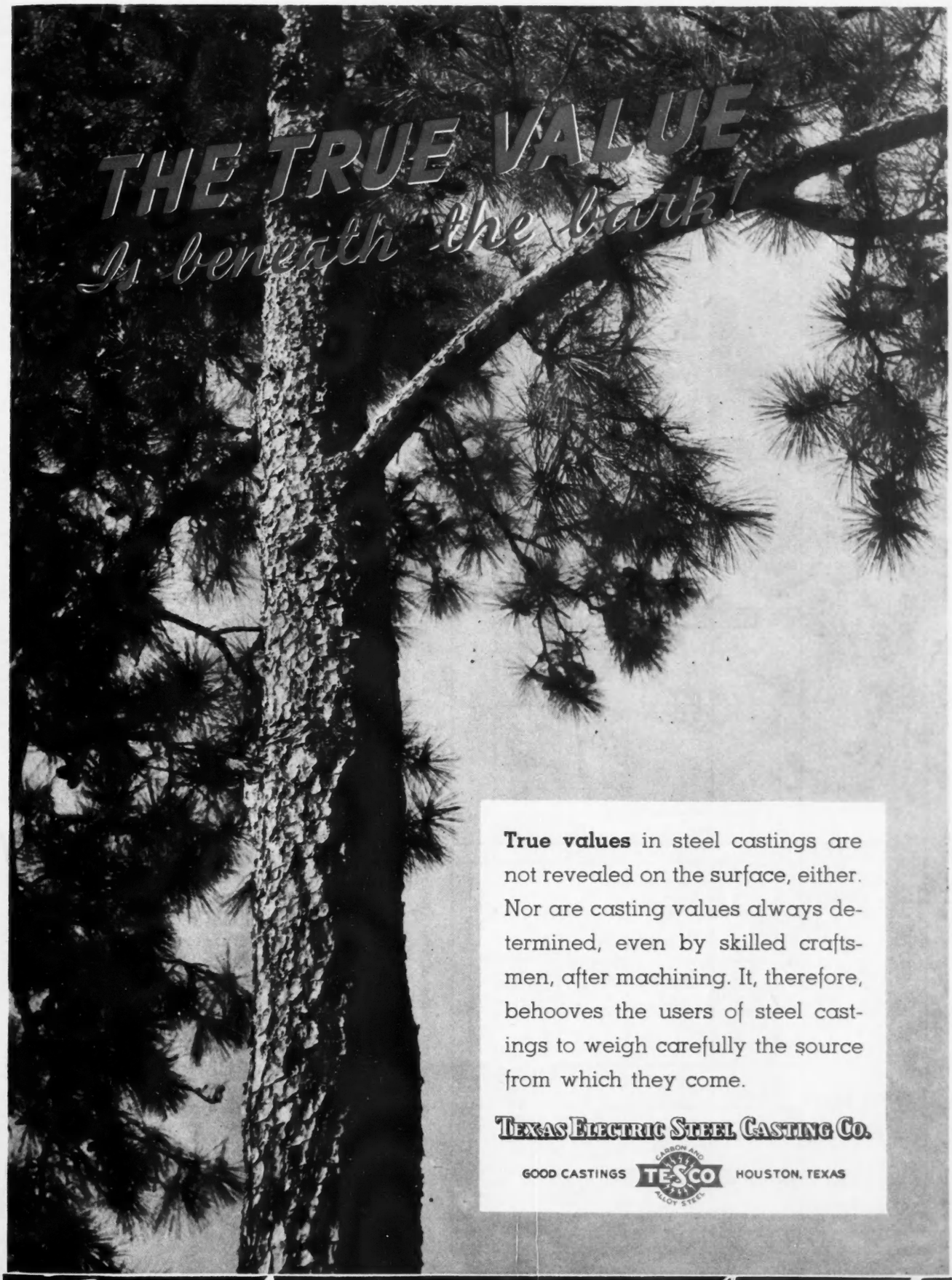
Special attention is called to the fact that before a wildcat area is turned over to one of the operating trusts, the Azerbaineft has complete charge of it. In other words, they drill all wildcat wells and prepare new areas for exploitation.

Each of the other local trust is represented on and is responsible to the departments discussed. There are over 300 geologists and engineers connected with Azerbaineft. The other areas of the Soviet Union are similarly organized. Because of their smaller size, they are, however, not as complex.

Daghestan Fields

Northwest of Baku, on and adjacent to the Caspian Coast, lies the Republic of Daghestan. In this area, important production has been discovered recently and potential areas developed.

The potential area is in a relatively narrow zone between the Caspian Sea and the Caucausus Mountains, a zone 30 to 50 kilometers in width and approximately 200 kilometers in length. The tectonics of the area is expressed by large box-like folds as well as by long narrow folds paralleling the mountain range, which in turn par-



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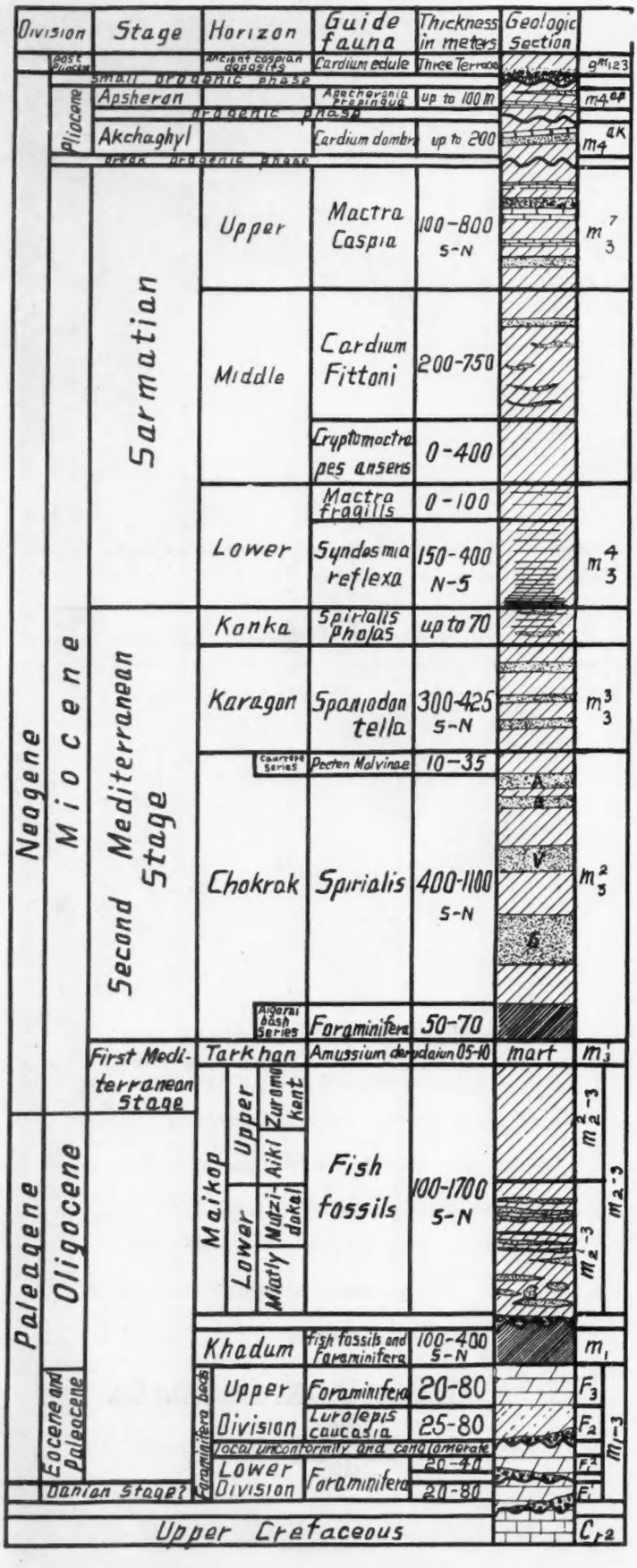

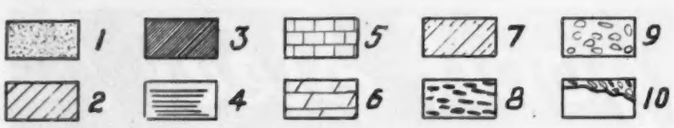

Summarized table of the Tertiary deposits of Daghestan. 1, sandstones; 2, clays; 3, marly clays; 4, marl bands; 5, limestones; 6, marls; 7, marly shale; 8, siderite concretions; 9, marly concretions; 10, basal conglomerate.

allels the sea coast. The folding of this area is relatively simple as compared with Azerbaijan and the stratigraphy is more regular. The age of the folding is Sarmatian, Post Akchygilian and is accompanied by considerable overthrust faulting, carrying Tertiary over Cretaceous. Two general lines exist: the western or mountainward; the eastern along the seacoast.

Commercial oil is confined chiefly to the Chokrak-Spirialis beds of the Miocene, the Maikop beds of the Oligocene, and the thin Foraminifera beds of the Eocene. Gas is found chiefly in the lower Maikop. The thickness and character of these beds can be observed in the attached geological section, (Fig. 19). Below these producing horizons, and outcropping on several deeply eroded structures is the Cretaceous, in which at many places oil and gas seeps occur. This indicates possible production in the Cretaceous. The producing areas and most important prospects will be briefly discussed.

I. Ogny Gas Field

Ogny gas field is located approximately 10 kilometers northwest of the ancient Persian village of Derbent on the Caspian Sea coast. The structure is approximately 30 kilometers long and 4 kilometers wide.

Shallow drilling was commenced in 1924 and from then to 1932-34, shallow wells ranging in depth from 20 to 60 meters were drilled, and 12 wells averaging 300 meters. The deepest well in the pool is 330 meters and is producing from Khadum and Maikop (Oligocene), and penetrates to the top of the Eocene. Gas of this pool is nearly pure methane, with no heavy hydrocarbons. The wells are small, averaging approximately 20,000 cubic meters per day, with a shut-in pressure up to 32 atmospheres. The lateral accumulation is limited by edgewater, especially in faulted areas, and the withdrawal of gas is small. Thus, pressure loss has been negligible. In the opinion of the author, this pool is not important, except that it offers possibilities of production within the underlying Cretaceous at depths easily accessible,

II. Duzlak

Approximately seven kilometers northwest of Ogny on the same anticline is another dome which will produce gas under conditions simi-

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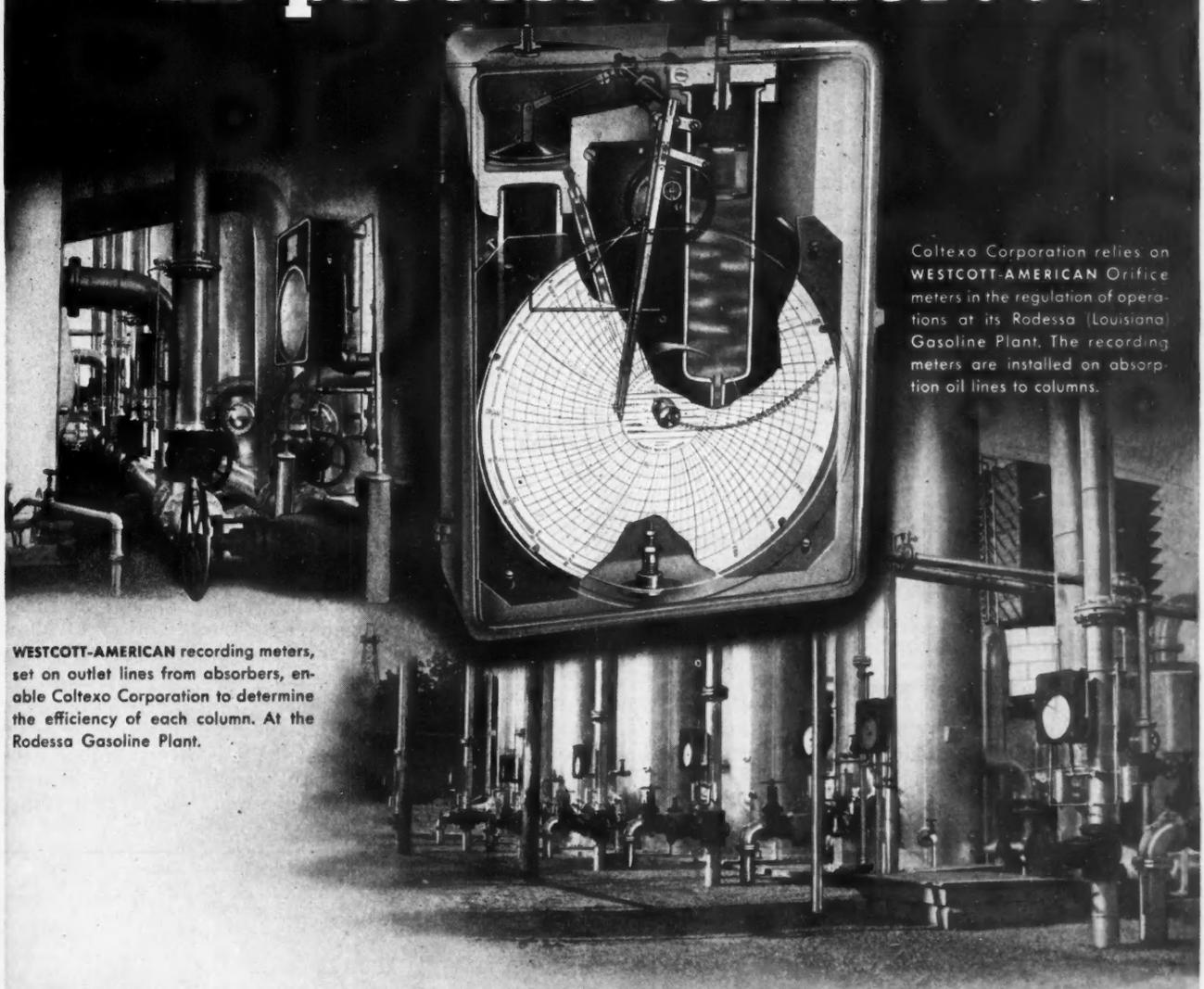

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lar to Ogny. This has been demonstrated by geological work conducted from 1924 to 1930.

III. Berekei

Five kilometers north of Duzlak, on the same anticline, is a small dome known as Berekei. More than 40 years ago, oil seeps attracted attention here. Prior to 1917, about 80 wells were drilled to very shallow depths, 15 yielding one ton of oil, 5 yielding 20 to 50 tons per day each, the balance being dry. The total production to 1914 was approximately 80,000 tons. The oil came from the contact of the Khadum and the Foraminifera in the Eocene. They were drowned out by hot salt water.

Subsequently, from 1926-30, over 100 wells ranging from 20 to 30 meters in depth were drilled, the results being in the main disappointing. The faulted structure, allowing free water migration, has flushed the field. Several tests have gone down to depths of 800 meters. Deeper prospecting, to determine possibilities of the Cretaceous, has been unsuccessful to date because of the huge quantities of hot salt water containing a large percentage of iodine and bromine. The Cretaceous has not been reached yet.

IV. Kaia Kent Oil Field

About 12 kilometers northwest of Berekei is located the field of Kaia Kent. This is a large, structural terrace on the northwest plunge of the eastern anticline, dissected by a large, longitudinal overthrust fault. In early times, many hand dug pits produced oil. The producing horizon is the Chokrak of Middle Miocene (from 30 to 70 meters thick.) Fifty wells, averaging from ½ to 12 tons per day, at depths of from 200 to 500 meters, have been drilled. The oil is light grade, .855 specific gravity, and contains 20 to 30 percent light fractions. While the field is not yet being exploited, its limits in the Chokrak have been defined, allowing for approximately 1500 wells. Spacing program is not known. The area will undoubtedly prove important. The Soviet Union today is developing light portable equipment to care for such a condition. The Maikop beds are now being tested and have shown gas with very slight shows of oil.

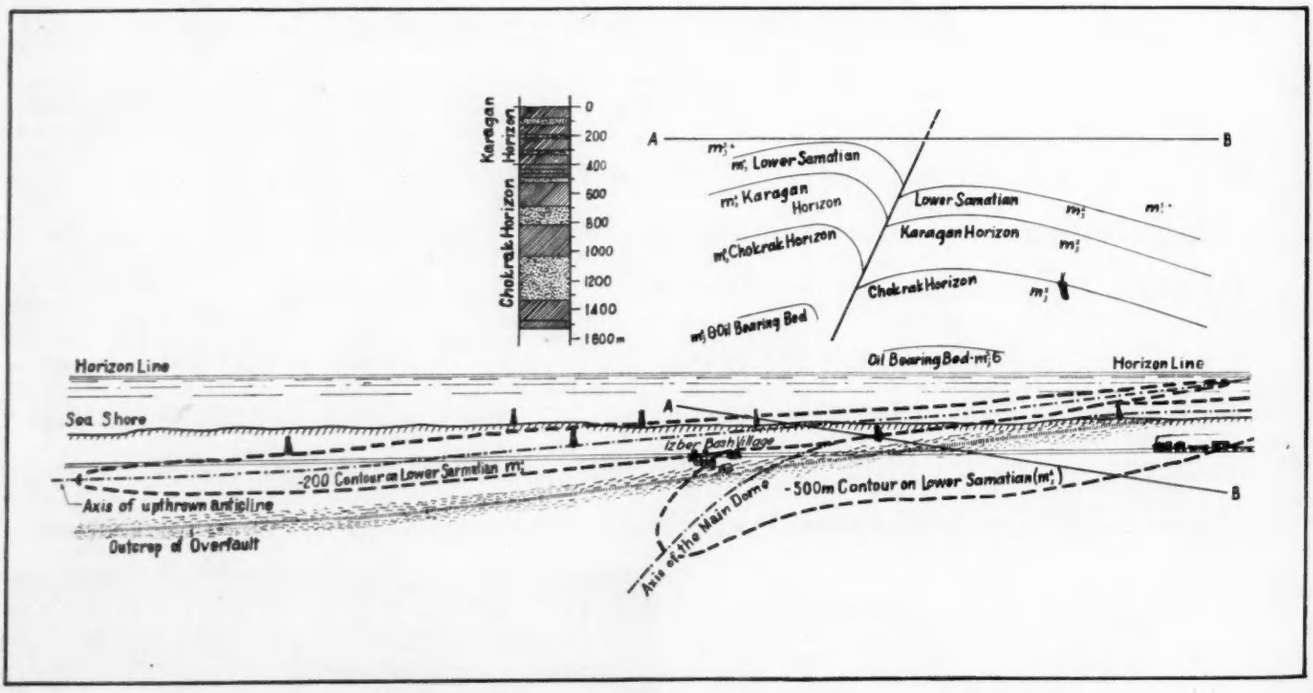
V. Izber Bash

Izber Bash, located 20 kilometers northwest of Kaia Kent, is the most important area in Daghestan. This is a split or branching anticline, one branch being mainly on the shore, the other mainly under the sea. The structure is outlined by the Sarmatian limestone beds. There is a large fault trending northwest and southeast, with a dip of 60 degrees. The main fold, two-thirds of which is under the sea, is productive. The auxiliary fold, two-thirds of which is on the shore, has recently been tested by one completion and found productive.

Izber Bash was discovered in April, 1936, and is producing from depths up to 1820 meters in the Karagan and Chokrak horizons. There are three sands in the Karagan (922-1058 meters) which are not important. The three groups of ten beds, totaling 200 meters in thickness in the Chokrak (1266 to 1420 meters), produce wells capable of from 20 to 250 tons per day each. The main producing horizon called "G" has not been completely penetrated, and a study of the nearby outcrops indicate a possible thickness of over 300 meters, with a total of 20 separate sands. The present development is taking place on the shore five kilometers from the crest of the structure, which lies under the sea. It is natural to presume, judging from similar experiences, that the wells on the crest will be more prolific. The sea, on the crest and flanks of the structure, is 10 to 12 meters in depth offering no serious handicap to development. The structure was mapped on the land and sea by use of areal photography, soundings and core drilling. There are no known oil seeps on the structure.

The oil from Izber Bash has a specific gravity of .834 and a benzene kerosene fraction of 59 percent, being much better than the Azerbaijan oil.

Twenty-nine derricks are up in this pool. Five are drilling, and five have drilled directional holes to test the structure under the sea, all having found production. One of



Column of Chokrak horizon in Izber Bash, one of the Soviet's most promising oil fields.

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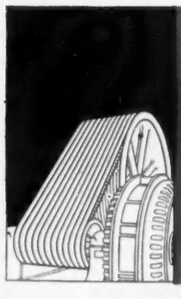

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these holes reached an offset of 750 meters. A new development for the Soviet engineers, observed only in this pool, was the drilling of two wells from a single location.

Very Important Discovery

The wells start at 12-inch, complete with 8-inch, spacing to be 150 to 600 meters. They are completed so that they may be produced from the bottom up. Gas/oil ratios and gasoline content of the gas are not yet known but there is no gas cap in the pool. Further up the crest, however, one may be found. The shut-in pressure is 80 atmospheres, the flow pressure 40 atmospheres. Plans call for the use of gas lift in the pool, when necessary. Some wells are making a small amount of water due to poor cementing jobs. The present production of 600 tons daily comes only from the testing of wells, same being shut in after test There is no pipe line out of the field yet, and it is not yet on intensive development. This field promises to be one of the most important and best operated in the Soviet Union. The latest engineering and production methods will undoubtedly be applied here, assuring great reserves from proven horizons.

This pool is undoubtedly a very important discovery. Its limits are not yet defined, either for depth or areal extent, although the estimated area is 3200 hectares (One hectare equals 2.47 acres.) I. Brod, the geologist in charge, estimates the ultimate recovery from the present Izber Bash horizons at 100 million tons, with lower horizons, such as the Maikop, lower Chokrak, Khadum and Cretaceous, yet to be tested.

VI. Achi Su

Fifteen kilometers northwest of Izber Bash is the Achi Su oil field. Here the structure is steeply dipping and asymetrical, and the Chokrak horizon outcrops on the surface. There are many oil seeps, the upper producing sands being sealed at the outcrop, the lower, the "G" horizon of Izber Bash, being buried. In general, the section is the same as Izber Bash.

Although small quantities of oil have been taken from this area for many years, consistent development was started about a year ago. The deepest well in the pool is 1200 meters. The wells produce an average of 40 to 60 tons per day, from a section up to 150 meters thick. The structure is 25 kilometers long and four kilometers wide, with a present proven area of 800 hectares. It has not yet been defined in any direction, with 40 drilled and drilling wells.

Edgewater has not yet been found in Achi Su, although wells have been drilled 400 meters down flanks on horizon "G." Forty percent of the "G" section, which has not yet been penetrated in its entirety, is sand. This horizon is estimated at well over 250 meters in thickness. The shut-in pressure of the wells in this pool is very small, being less than 10 atmospheres. Consequently, wells do not flow long, and quickly commence pumping. The present production is approximately 200 tons per day, being removed through a six-inch pipe line recently completed. Brod estimates the reserve from the known horizons at from 40 to 45 million tons.

Large Ultimate Indicated

It is apparent that while these wells are small and come in with little pressure, the thickness of the producing horizon, together with the tremendous size of this structure, indicates a large ultimate recovery. Fourteen derricks in operation were visible to the author as well as 11 electrified pumping units. The oil of this pool ranges from .844 to .874 specific gravity with 41 to 56 percent fractions at 360 degrees centigrade.

In the northern area of Daghestan, the Chokrak increases in thickness to over 1000 meters, of which 50 percent is sand. Structures of this area are to be tested, and if productive in this horizon, would prove to be very valuable.

Other Possibilities

In addition to the possibilities on the eastern line of folding in the Tertiary, there are possibilities in the western line of folding in the Maikop as well as Cretaceous. Several large structures exist on this line of folding. At Chubar Arkh, west of Makhach Kala, the captiol of Daghestan, prospecting is now going on for Maikop and Cretaceous oil. The Maikop section shows saturation and there are many Maikop oil and gas seeps in this area. South and east of Chubar Arkh, there are two large structures, the tops of which are eroded down to the upper Cretaceous. These are to be tested for lower Cretaceous possibilities. It is believed that these may produce, insofar as an examination of the Cretaceous at the outcrop shows both source rock and reservoir rocks. Also, there are many oil and gas seeps in the lower Cretaceous at various places in Daghestan and the waters encountered in deep drilling resemble those of oil field waters. Even the Jurassic is considered a possibility in this area. There are over 100 known untested structures in Daghestan, only two or three being tested at present. In the opinion of the author, the future possibilities of Daghestan are good, and judging by the technique in both geology and engineering shown at Izber Bash, the new production, if found, will be well handled.

Fields of Grozny Region

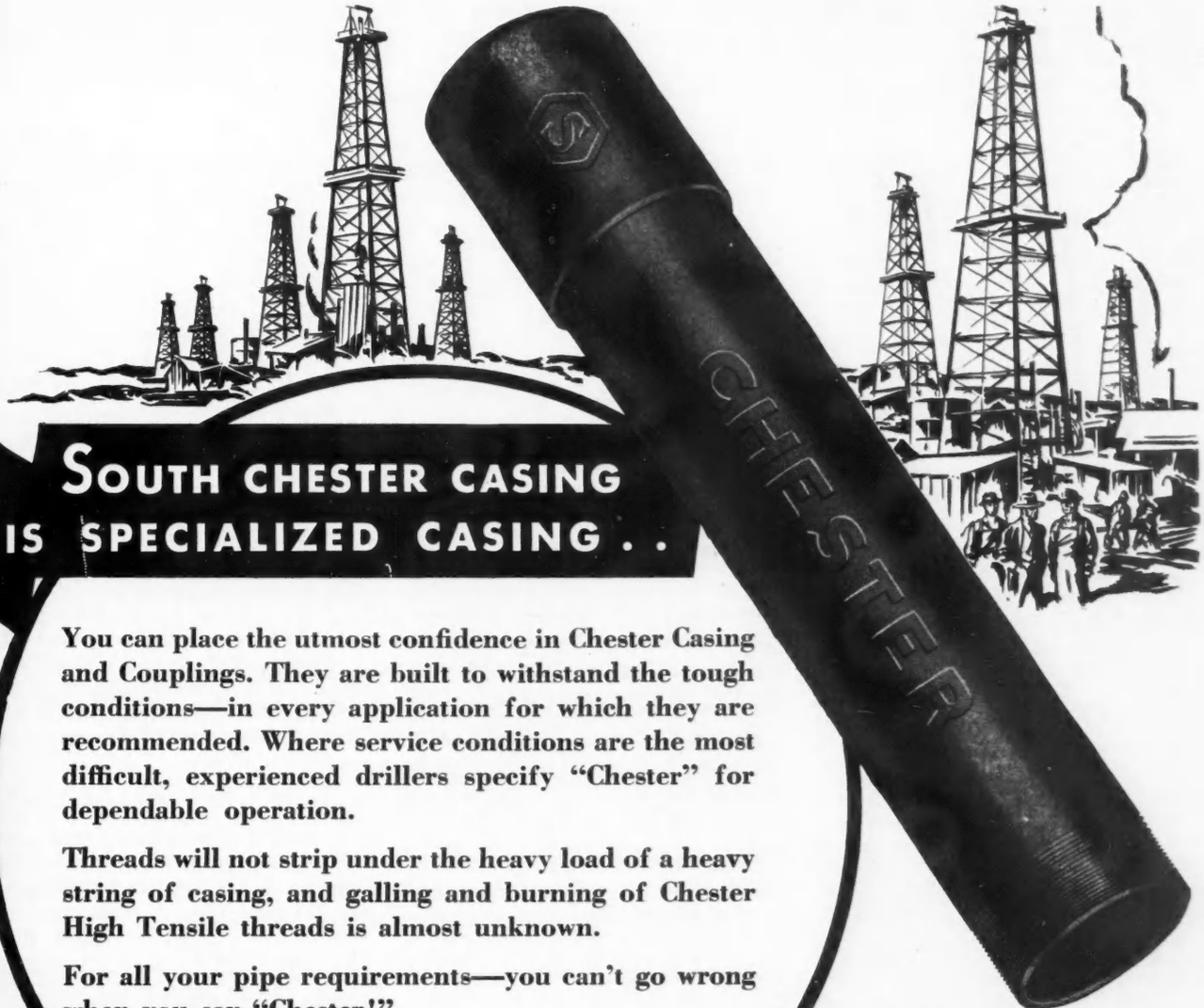
Fields of Grozny area have been described in considerable detail from time to time, with the exception of recent discoveries and extensions. The area lies approximately 200 kilometers northwest of Makhach-Kala on the northern flanks of the Caucausus Mountains. Production is found in a series of folds paralleling the mountain range and is concentrated in two general areas as follows: one adjacent to the great oil center of Grozny which contains many large refineries, and the other lying about 50 kilometers northwest of Grozny.

The statigraphy in general corresponds to that of the Daghestanian area, production coming from the Chokrak and Karagan.

Oil seeps near Grozny have been known since time immemorial and from 1833 to 1875 more than six million tons were obtained from either shallow wells or pits. The first real development began in 1893. By 1900 there were more than 100 producing wells. In 1913, the new Grozny area, east of the old Grozny field, was discovered, which by the end of the year had become a very important district. Malgobek, Voznessenka and Gorskaya Mountain are relatively new.

I. Old Grozny

Old Grozny, a field of 8000 acres, is located on the Sunja anticlinorium, which is the first main line of folding off the foothills from the main Caucausus. Grozny is a sharply folded anticline, complexly faulted and asymetrical in character. It is producing in both the overthrust and underthrust portions from 14 sands in the Karagan with a combined thickness of 300 meters and four sands in the Chokrak with a combined thickness of 200 meters.



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In the underthrust area, the beds stand nearly vertical—60 to 80 degrees. The sands are lenticular and irregular in porosity.

Cumulative production of older Grozny to 1935 was 30,000,000 tons. Annual production at present is approximately 270,000 tons. The field, in its early development, was characterized by wells with huge initial productions and large ultimate recoveries.

Tried Retorting

In 1932, mining of the oil sands was commenced. Work was carried on until 1936, the total underground workings equalling 760 meters. In addition to studying the geological features, there was an attempt to retort the mined sand, which was found non-commercial. Only three to five percent of the total 10 to 15 percent of original content (by weight) was recovered. It was felt that water flooding had removed the oil. Pits were also dug in the sand of a diameter of 1 x 1 meters to a depth of 2.5 meters. The yield from these pits was up to 100 liters per day. Maintenance costs of this operation were so high that the project was abandoned. The field offers little possibilities in the way of additional reserves although the present production of paraffine base oil is important.

II. New Grozny Field

New Grozny is located on a northwest, southeast brachianticline characterized by steep limbs on its asymetrical box-like fold. Production occurs in the Karagan and Chokrak, there being 13 producing horizons. The horizons are uniformly coarse-grained, porous sandstones, differing in this respect from many of the other pools. One horizon, No. 16, has yielded 23 million tons, while another has yielded 11 million tons and a third 2½ million tons. Porosity of the sands in both Grozny fields reaches up to forty percent. The wells initially had large productions, though they dropped off rapidly, and the newer wells have relatively small initial productions.

Total production to 1935 for New Grozny was approximately 47 million tons. There is no gas cap in this field, the oil being under hydraulic pressure, old wells making much water. This field has been a disappointment to the Soviets, not coming up to expectations. It offers little possibilities in the way of additional reserves, and present production is not large.

III. Gorskaya Mountain

The Tersky anticlinorium, upon which additional fields in this district are located, is the second range of folding from the Caucasus Mountains. It is upon this ridge that newer areas are being opened. The most easterly field on the Tersky ridge is the Gorskaya Mountain field. It was discovered in 1936 and is not yet defined. It is located upon what is known as Kalauss anticline, a part of the Tersky anticlinorium. The fold which forms the oil field is complicated by an overthrust fault of an amplitude of 300 meters. The thrust is from south to north and dissects the fold diagonally. The upper Sarmatian deposits crop out on the surface and the producing horizon is the Chokrak. The Karagan is expected to produce when reached.

This complex structure was detailed by core drilling and electric coring. Potential possibilities of the underthrust portion of the fold led to the drilling of a well which struck this underthrust at 1205 meters, finding production. Depth of production to date is 800 to 1250 meters, the wells in the overthrust making gas at eight to 12 atmospheres, and those in the underthrust making from 100 to 250 tons of oil per day, initial. Very little of the productive series has been drilled and the field is not yet defined. Possibilities of linking Gorskaya Mountain with fields to the west are considered good. The author observed four pumping wells, electrified, and 11 operating derricks, all of rotary type, using Soviet equipment throughout. The ultimate recovery per hectare in this pool will in all probability be small. The areal extent is not expected to be very large, and consequently of relatively little importance.

IV. Malgobek-Voznessenka

This area, referred to as the Malgobek region and containing two pools, lies west of Gorskaya Mountain on the Tersky anticlinorium. Drilling was commenced in 1901 on the eastern end of the structure, commonly referred to as the Voznessenka. Three wells were drilled, all failures. The district lagged, due to the attention being diverted to Grozny. Prior to 1917, 22 wells were drilled, of which five found commercial production. Up to May, 1920, the field produced 15,000 tons. The production in 1930 was 47,900 tons. From 1924 to 1936, approximately 600,000 tons were produced.

The producing series fall in the Karagan and Chokrak. A representative well would reveal a section as follows:

	Depth in Meters
Top Karagan	657
First and second sand	657-667
Third and fourth sand	680-700
Fifth sand	705-722
Sixth sand	732-737
Seventh sand	742-752
Eighth sand	753-782
Ninth sand	787-794
Tenth sand	833-847
11, 12, 13 and 14th sands (Top Chokrak)	860-905
15th sand (Total depth)	933-940

The fold is very complex, overturned and at places, eroded down to the Chokrak. Thrust faulting is common and complicates the production problems greatly.

Production on the western end of the anticline is commonly called the Malgobek pool but in reality is a part of the same structure extending into the Voznessenka pool.

Exploration at Malgobek commenced in 1927. Commercial production was not obtained until 1933. By January, 1937, over 160 wells were producing.

In general, the area is very spotted and can be considered as a large gas cap, flanked by a narrow ring of production from 40 to 350 meters in width, on individual sands. The total area under prospect and exploitation is large, being 10,000 hectares. The total production per well is relatively small, being from 7000 to 50,000 tons, with an initial of 300 tons per day at pressures of from 40 to 100 atmospheres—casing head.

Reserve Not Startling

Daily production from the combined Malgobek-Voznessenka areas is approximately 3500 tons of .840 to .900 gravity oil. A characteristic of this anticline is greater production with greater depth. Many wells have been exhausted and are abandoned or shut down. However, development is proceeding rapidly, the total drilling being upward of 15,000 meters per month.

In the opinion of the author, the potential reserves of the Malgobek area, while important, are not startling. Possibly additional areas of a like nature will from time to time be discovered on the Tersky ridge. The complex nature of the folding will make the exploration and exploitation costly. To offset this, however, are the deeper possibilities of the Maikop and Cretaceous in deeply eroded structures.

[To be continued]

MEN IN THE INDUSTRY'S NEWS

J. L. LATIMER MADE MANAGER OF MAGNOLIA PIPE LINE COMPANY AS THEODORE J. FITCH RETIRES

FITCH WAS A PIONEER AMONG PIPE LINE MEN; LATIMER HAS 22 YEARS OF SERVICE

THEODORE J. FITCH, vice president and manager of the Magnolia Pipe Line Company, Dallas, has terminated more than 45 years of pipe line service, including 27 years with the above company and predecessors. Overdue retirement privileges were extended to Fitch at a meeting of the board of directors held April 5, according to D. A. Little, president. J. L. Latimer, formerly assistant manager of pipe lines since March 1, 1937, succeeds Fitch, who was also a vice president and director of the Magnolia Petroleum Company.

Use of pipe lines as a means of transporting petroleum was in its infancy when Fitch as a beardless 17-year-old was accepted for day labor in a construction gang for United Pipe Lines in 1887 at Bradford, Pa. He was a native of Petroleum Center, Pa., an early-day landmark for the oil business. His chosen vocation came natural from these surroundings.

J. L. LATIMER

Qualified as an engineer and operator in 1890, he transferred to the Western Atlantic Pipe Line Company and was assigned to duty at Little Washington, Pa. Three years later he moved to Sistersville, Pa., to work for Eureka Pipe Line Company, and developed into a gauger and connection foreman. Except for a 5-year period spent on a farming adventure, he served the latter concern and Buckeye Pipe Line Company until attracted to Texas in 1911 by the offer of a chief engineer's job in connection with the construction of the Magnolia Interests' first trunk line from Electra via Corsicana to Beaumont.

Upon the completion of this project, Fitch was made a district superintendent. He was advanced to acting manager of pipe lines in 1923, and assumed complete charge June 1, 1932, through the retirement of the late Dave C. Stewart.

Latimer has been with the company 22 years, having joined Magnolia Petroleum Company's pipe line division when 18 years of age. His first work was as a helper on a tank car rack at Thrall, Texas. He advanced until in the fore part of 1917, he was engineer at Addington, Okla., station. He was gauging in the Shamrock, Okla., field when the World War enlistment started.

After the war, Latimer again joined Magnolia as a gauger. He became chief gauger for Oklahoma early in 1923, but returned to Texas within a few months as district foreman at Corsicana-Powell. In 1924, he was pipe line scout and oil solicitor at Wewoka-Cromwell, Okla. In the same year, he was elevated to superintendent, and took charge of the construction of the company's first welded trunk line, which linked Luling, Texas, with the Corsicana-Beaumont main line.

Upon completion of this work, Latimer took charge of Southwest Texas operations, where he remained until August 15, 1934, when he was promoted to general superintendent for Texas Louisiana and Arkansas. On March 1, 1937, he became assistant manager of Magnolia Pipe Line Company, which position he held until his new promotion to manager.

GAGE LUND

with Standard Oil Company of Texas, Houston, was recently promoted to assistant amanager of the company, succeeding A. J. Cunningham. Lund will continue to maintain headquarters in Houston.

MURRAY M. DOAN, a director of the Sunray Oil Company, Tulsa, is recovering in Christian Holmes hospital at Cleveland, Ohio, following amputation of a leg due to infection. Doan was formerly president of Gypsy Oil Company and later an executive of Phillips Petroleum Company.

C. E. (DAN) McGREW, Panhandle district superintendent for Magnolia Pipe Line Company with headquarters at Kingsmill, was placed on the retired list April 1 after completing 40 years of service with the Standard group. He is a native of Butler County, Pa., and launched his pipe line career as a water boy for a connection gang in West Vir-

EMBY KAYE

Vice president in charge of manufacturing for Skelly Oil Company at Tulsa has resigned effective April 1 to join Wasatch Oil Refining Company and allied interests of Salt Lake City, Utah. He will actively head the new expansion program of the company which includes construction of refineries at Pocatello, Idaho, and at Spokane, Washington. Wasatch Oil Refining Company has operated a refinery at Ogden, Utah, for the past several years.

T. R. BATTE, JR., AND FRED F. WALTERMIRE ARE PROMOTED BY CONTINENTAL OIL COMPANY

ginia. Qualifying progressively, as a laborer, telegraph operator, gauger and engineer, he was attracted to Texas in 1903 by the Spindletop boom. He became associated with the predecessors of Magnolia Pipe Line Company, thereby retaining the continuous service record. Harry S. Smith, district foreman at Electra, has succeeded McGrew, and will be superintendent of the newly created North Texas district, which will embrace the Panhandle, Electra-Burkburnett district and the mainlines to Bowie junction.

C. D. HIER, with Seismograph Service Corporation, Tulsa, with his wife and six-months-old child, Bonny, have left for New York City where they will board ship for Batavia, Java. Hier will have charge of the Netherlands East Indies activities of the company, and will remain there, with his family, for about two years.

BUITIRO HOSIKAWA, production engineer for North Sakhalin Oil Company, Tokyo, Japan, left Los Angeles April 4 for Houston after a few days in California fields.

LESTER A. LUECKE, petroleum geologist, who has spent the last 10 years with Gulf Companies in North and South America, has opened a consulting office in the Harvey-Snider Building, Wichita Falls, Texas. Luecke led the expedition into the Barco concession of Colombia in 1931 when the Mellon interests reganied title to the concession.

P. A. MEYERS, geologist for Pan American Production Company in the Corpus Christi, Texas, district, has been transferred to Offerman, Georgia, where he will do the necessary geological work in connection with the first deep wildcat in that state being drilled by Pan American Petroleum & Transport Company.

DR. ROBERT E. WILSON, president of Pan American Petroleum & Transport Company, visited properties of the company out of Houston and in Texas City last week.

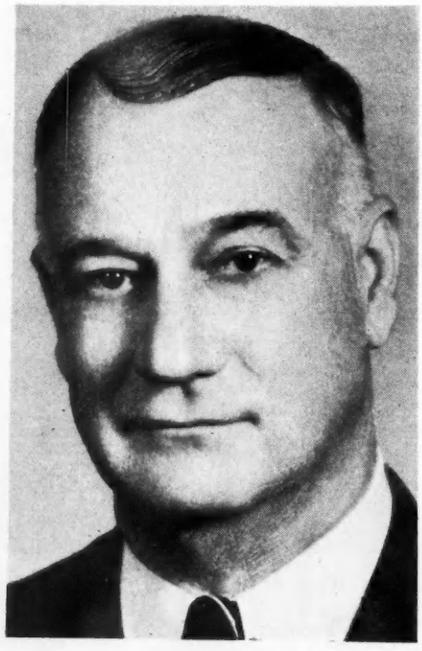
R. G. GOUGH, assistant production superintendent for Continental Oil Company in the Wichita Falls district, has been transferred to Fort Worth to become petroleum engineer for the company's Texas-New Mexico division.

VERNON L. RED, construction foreman for Magnolia Pipe Line Company, Dallas, has been appointed superintendent of the North Oklahoma district, succeeding G. V. Copland, who died March 14 at his Drumright residence. Red has established headquarters at Oklahoma City.

M. C. McGOWEN, president of Union Producing Company, Shreveport, Louisiana, was a recent Houston visitor.

O. B. MULLINS, former general manager of production for Derby Oil Company at Wichita, Kansas, is in charge of field operations for Tom C. Johnson. Cliff Mercer, formerly district supervisor for the Derby company at McPherson, Kansas, succeeds Mullins as production manager.

WALTERMIRE GENERAL SUPERINTENDENT GULF COAST DRILLING AND PRODUCING; BATTE HEADS COAST PIPE LINES



T. R. BATTE, JR.

APPOINTMENT of Fred F. Waltermire to general superintendent of production and drilling of Continental Oil Company's Gulf Coast Division has been announced by J. G. Dyer, manager of production and drilling east of the Rocky Mountains. T. R. Batte, Jr., will become general superintendent of oil pipe line and terminal operations. Both men will headquarter at Houston.

The promotions come as a result of Continental's wide expansion in the Texas and Louisiana Coastal areas. During the past three years the company has increased its production in the Driscoll, Texas, area; opened up three new fields in Louisiana, where it has more than 24,000 acres under lease; constructed large gasoline plants at Basile and Lake Charles, Louisiana; acquired and enlarged a deep-water terminal at Lake Charles; and built an extensive Louisiana pipe line system.

Batte was born September 27, 1893, at Caldwell, Texas. He finished his grade and high school education at Bryan, Texas, and followed this with civil engineering study at Texas Agricultural and Mechanical College and Cornell University. After many years experience as a consulting engineer and manager for oil companies in Texas and Mexico, he joined Continental Oil Company as technical advisor to the president. He was made general superintendent of the Gulf Coast production division in 1935. His appointment as general superintendent of pipe lines and terminals for the Gulf Coast Division became effective April 1. He is married and has two children.

Fred F. Waltermire was born February 27, 1900, at Perry, Indian Territory (now Oklahoma). He attended grade and high school at Perry, and later studied at the University of Oklahoma. Before joining Continental as drilling superintendent of the Gulf Coast Division in 1935, he had many years experience as a driller and tool dresser for various Oklahoma contractors, working among other places, at Tulsa, Tonkawa and Oklahoma City. His appointment to general superintendent of production and drilling for Continental's Gulf Coast Division became effective April 1. Waltermire is married and has two children.

RAUL PEREZ and **LUIS MARTINEZ,** geologists connected with Huasteca Petroleum Company in Mexico for a number of years, have been transferred to Egypt, where they will be engaged in geological work for one of the subsidiaries of the Standard Oil Company of New Jersey.

DAVID W. SIMPSON and **LAWRENCE MENDIVE,** accountants for Huasteca Petroleum Company at Tampico, Mexico, and Henry Frosali, in charge of the labor department of the same company at Ebano, state of San Luis Potosi, Mexico, have all been transferred to the Lago Petroleum Company in Venezuela.

G. HARRISON SMITH, chairman, and J. H. McLeod, president, head officers of Royalite Oil Company, Ltd., production subsidiary of Imperial Oil Company, Ltd., were re-elected at the company's anuual meeting held last week at Calgary, Alberta. Other officers are Alexander Hannah, K. C., vice president; T. E. Burns, secretary-treasurer, and W. S. Herron, C. M. Moore and S. F. Heard, directors.

ALEXANDER HANNAH, Calgary, was named president of Foothills Oil & Gas Company, Ltd., Alberta producing company, during the company's annual meeting last week. Other officers are J. H. McLeod, vice president; T. E. Burns, secretary-treasurer, and S. F. Heard and C. M. Moore, directors.

WALTER S. CAMPBELL, Calgary, chairman of the Petroleum Producers' Association, told a meeting of the Vancouver (British Columbia) Board of Trade that London, England, groups were interested in Alberta oil and that producers sought lower freight rates to make possible movement of crude beyond present market boundaries.

ROBERT H. COLLEY, president of Atlantic Refining Company, Philadelphia, headed a party that included J. D. Gill, director; W. M. O'Connor and R. C. Tuttle, vice presidents, in making a tour of all important properties held by Atlantic in the Southwest. The group spent several days in Dallas.

ROBERT KURTZ, geologist for Ohio Oil Company in the Illinois Basin area, has returned to Flora following a trip through the east which he made with Mrs. Kurtz after the American Association of Petroleum Geologists convention in New Orleans.

O. W. KILLAM HONORED AS PREMIER WILDCATTER OF SOUTH TEXAS AT SAN ANTONIO CELEBRATION

DRILLING MORE THAN THOUSAND TESTS HAS OPENED MANY NEW OIL AND GAS AREAS

O. W. KILLAM

O. W. KILLAM, "champion wildcatter" of South Texas was honored by several hundred oil operators from the Mid-Continent district April 8 at a stag entertainment in San Antonio sponsored by the South Texas Chamber of Commerce. Killam, of Laredo, has drilled well in excess of 1000 oil and gas tests in South Texas and during the last 17 years has opened nearly a score of producing areas.

Officials of the American Petroleum Institute, Mid-Continent Oil and Gas Association, Independent Producers Association, Texas Railroad Commission, Congressmen and other political celebrities were among the guests. Killam was presented with a scroll, "Grand Pioneer of South Texas."

Killam was the speaker of the evening, his subject being "Experiences of a Wildcatter." A most elaborate entertainment program was presented. The arrangements committee was headed by Al Buchanan, as chairman, and included R. F. Schoolfield, F. M. Frasher, E. B. Rubsamen, Jr., Paul Meaders and E. H. Keator.

Born in Missouri April 27, 1874, and educated at La Grange College and the University of Missouri where he graduated in law, Killam spent the earlier portion of his business career in Oklahoma. There, he became engaged in the lumber industry, operating a large lumber yard, and later becoming a successful exponent of political science, serving four years each in the Oklahoma house of representatives and senate.

Moving to Laredo in 1920, Killam purchased a rig, hoisted his first derrick, and drilled Hinnant 1 in Mirando Valley, Zapata County. He drilled again, the Hinnant 2. Misfortune assailed that effort. April 17, 1921, Hinnant 3 came in pumping 100 barrels at 1461 feet. It was the first commercial discovery of the Mirando district. That was the starting of Killam in the oil business; likewise, the beginning of Southwest Texas oil development.

The Schott field in Webb County was Killam's next development, and he followed that with establishment of Texpata Pipe Line Company, the founding of Mirando City, and the building of Misko Refineries. His successes in the oil business have grown through the years, his latest addition to production being the Killam field of Webb County, which was placed in the list of new fields in 1936 as the thirty-fourth of the district.

Killam was born in Lincoln County, Missouri, April 27, 1874. He was educated in LaGrange College and the University of Missouri. His oil operations extend throughout the many fields of Texas, but his principal interest is vested in the territory where he made his first discovery.

JOHN BUNN, drilling contractor of Houston, is in Mexico City to attempt to recover his drilling material.

ROBERT E. WILSON, president of Pan-American Petroleum and Transporting Company, New York, was visiting in Houston last week.

W. W. FONDREN, independent operator of Houston, has recently been appointed to the advisory board of Sabine Royalty Corporation, Tyler, Texas.

C. H. SMITH, Toronto, was re-elected president of Dalhousie Oil Company, Ltd., at the Alberta producing company's annual meeting last week. Other officers are A. Hannah, K. C., vice president; T. E. Burns, secretary-treasurer, and A. C. Newton, N. J. Christie, S. F. Heard and J. H. McLeod, directors.

J. A. RANKIN, Salina, John Koch, Sabath, and Harold Rolley, Holton, last week organized Pawnee Petroleum Corporation to take over properties of Rush Petroleum Company in Stafford, Kiowa, Barton, Russell and Ellis counties, Kansas.

DR. RAY NEIDIG was named president and chairman of the board of Share Royaltoes, Ltd., Alberta producing company, at a meeting of directors held in Calgary last week. Other officers named are Tom Campbell, vice president and managing director; Thomas Humphries, C. A., secretary-treasurer, and John Tully, George F. Ingram and G. W. Dover, directors.

J. H. MOSEL, Columbus, heads Glenwood Oil & Gas Company, organized last week as an Ohio corporation to engage in oil and gas exploration in Ross County. Other officers are Frank H. Nagle, vice president; Joseph H. Yearling, secretary and treasurer, and Gebhard Jaeger and George E. Landis, directors.

J. H. McLEOD, Calgary, was named president of South West Petroleum Company, Ltd., Alberta producing company, at the company's annual meeting last week. Other officers, all re-elected, are A. Hannah, vice president; T. E. Burns, secre-

tary-treasurer, and Hon. M. W. Doherty, Toronto, and S. F. Heard, Calgary, directors.

F. ALEXANDER SKELHORNE discussed "Oil Possibilities in Alberta" before members of the Associated Canadian Travelers meeting in Calgary, Alberta, last week.

DIED:

JOHN M. HORN, 75, field superintendent for Huntington-Oklahoma Oil Company, Midway City Gas Company and Sovereign Gas Company, was killed April 2 when his automobile crashed into a creek bed 40 feet below the highway while he was returning from Kermit to his home in Huntington, West Virginia. He was well known among West Virginia operators, having been connected with the industry since he was 19 years old.

CHARLES F. MORRIS, 65, veteran operator of Glover Gap, West Virginia, died April 2 in a hospital at Fairmont of injuries suffered when an oil rig collapsed upon him a day earlier.

ROBERT JAMES BURNS, Calgary, vice president and general manager of Grease Creek Petroleum Corporation, Ltd., Alberta producing company, and active in the affairs of several other Canadian operating companies, died last week in Calgary.

DALE DOLSUN SPARKS, formerly of Houston, died in Turkey recently from meningitis after a brief illness. He had gone there early in 1938 to head the micropaleontology department for the Turkish government's oil exploration department. Word received from Ankara, Turkey, April 4 stated Mrs. Sparks is returning to the United States. Prior to going to Turkey, Sparks had been active in Mexico and Texas.

NORBERTO DARLING AGRAMONTE, ex-chief clerk of Sinclair Pierce Oil Company in Mexico City, last week died of a heart attack while attending a picture show there. He was 63 years old and a native of New York. He had been an oil man for some 40 years and was socially prominent.

LESLIE A. FISHER, 36, geologist for Sinclair Prairie Oil Company, Houston, was instantly killed in an auotomobile accident near Galveston, April 1. He is survived by his widow and a small son.

ALFRED H. TROTTNOW, 52, treasurer of Braden Steel & Winch Company, Tulsa, died April 4 in a Tulsa hospital following an emergency operation. His car collided with a truck near Oklahoma City March 31. Trottnow, a native of Germany, moved to Tulsa from New York City in 1920.

KARL WITT, 47, Tyler producer and former tool pusher in West Texas, died suddenly March 30 at Greenville, Texas, while visiting relatives. He had been active in the East Texas field for the past two years.

Association Activities

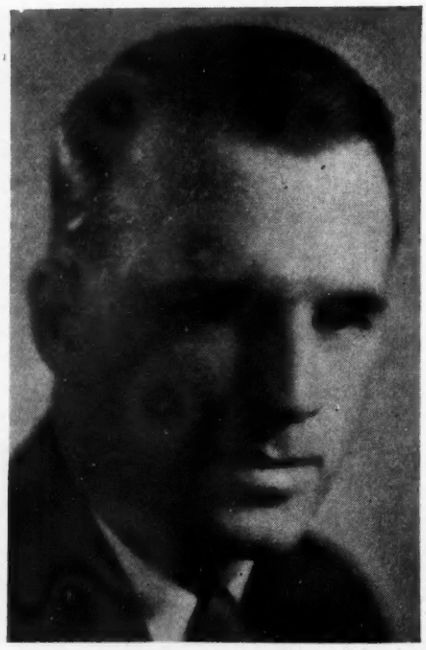
Houston Technical Club is organized

The Houston Technical Club was organized March 28 at a meeting attended by over 50 men identified with the petroleum industry.

I. W. Alcorn, engineer with The Pure Oil Company was elected president. H. O. Sears, Alliger & Sears Company, was named vice president. The secretary and treasurer is O. A. Schilling of Mid-Continent Supply Company.

The Houston Technical Club was formed along lines similar to the successful Tulsa Technical Club. Membership is limited to those connected with the operating departments of oil and refining companies, and to equipment suppliers and their representatives.

It is planned to hold meetings on the last Monday of each month at the Ben Milam Hotel, Houston, at which a short instructive program will be presented following dinner. Aggressive efforts are to be made to increase the membership of the club among oil and refining companies, so that the monthly meetings may serve as a clearing house for information of both engineering and practical nature.



Alvin Krupnick

I. W. ALCORN

Division production engineer in the Gulf Coast for The Pure Oil Company, Houston, who was elected president of the newly organized Houston Technical Club, is a graduate of the Missouri School of Mines and Massachusetts Institute of Technology. He commenced his career in the oil industry at Burbank, Oklahoma, being associated with Independent Oil & Gas Company (now Phillips Petroleum Company) in various engineering capacities. He organized the concern's production engineering department under C. P. Dimit. Later he joined Smith Separator Company and Oil Well Supply Company, before joining The Pure Oil Company.

Special train from Tulsa to A.P.I. at Wichita

The Santa Fe Railroad will operate a special train from Tulsa to Wichita, Kansas, on the night of May 22. This will enable those attending the International Petroleum Exposition in Tulsa, May 14-21, to go to the Mid-Year Meeting of the American Petroleum Institute in Wichita on May 23-25.

To take care of this movement, the Santa Fe will operate a steam train with pullmans that will leave Tulsa at 11:40 p. m. Sunday, May 22, and arrive in Wichita at 8:35 a. m. May 23. Those planning to make this trip should make pullman reservations as soon as possible, so the railroad can have sufficient equipment on hand.

Special from Houston

Arrangements have been made also whereby those in Houston may attend both the Exposition and the American Petroleum Institute meeting and procure roundtrip fares despite the diversified routing. The roundtrip fare from Houston to Tulsa, thence to Wichita and return to Houston is $38.17. Pullman fares are extra.

Those going from Houston may leave via the Burlington at 4 p. m. and arrive in Tulsa the next morning. They can then go to Wichita on the Santa Fe special. Two optional routes are available in returning from Wichita to Houston. One Santa Fe train leaving Wichita at 1:06 p. m. arrives in Houston at 7:05 a. m. the next day. Another Santa Fe train leaves at 7:55 p. m. and arrives at Dallas at 7:45 a. m. the next day, where connections may be made with the Burlington leaving at 8:15 a. m. and arriving in Houston at 12:25 noon. The Burlington and Santa Fe will honor each other's roundtrip tickets. Houstonians may make their reservations for this service with either the Burlington or Santa Fe representatives.

IPAA meets at Tulsa October 19-21

The Ninth Annual Meeting of the Independent Petroleum Association of America will be held Wednesday, Thursday, and Friday, October 19, 20 and 21, it has been announced by Chas. F. Roeser, president. Tulsa, national headquarters of the association, will be the host city. These dates have been confirmed by a meeting of the directors of the association resident in Tulsa.

Extensive plans for the entertainment of the largest attendance in the nine years' history of the association were made at the meeting. The association has membership in 40 states. Executive officers of the association are: Chas. F. Roeser, president; H. B. Fell, executive vice president; Russell B. Brown, general counsel; C. E. Buch-

ner, executive manager; T. J. Steuart, assistant to the president; and Chas. Van Vleck, field manager.

It has been announced by H. B. Fell, executive vice president of the Independent Petroleum Association of America, that the personnel of the association's committee on elimination of illegal production has been completed and that the membership of the committee is as follows: Amos L. Beaty, chairman, Amos L. Beaty & Company, Inc., Houston; John Kilgore, vice chairman, Wichita Falls, Texas; Wm. P. D. Carey, Hutchinson, Kansas; W. P. McGinnis, Indian Territory Illuminating Oil Company, Bartlesville, Oklahoma; Jeff Davis, chief counsel, Lion Oil Refining Company, El Dorado, Arkansas; and C. H. Lyons, Lyons & Prentiss, Shreveport, Louisiana.

The personnel of the committee is composed of outstanding lawyers from five of the leading oil producing states in the Mid-Continent area, and all of the members of the committee are thoroughly familiar with the legal problems of the petroleum industry so are well qualified for the particular work which they have been selected to do.

In announcing the appointment of this committee Mr. Fell stated that the work of the committee would consist of preparing suggestions for laws, or amendments to existing laws, that would serve to eliminate entirely the illegal production of oil that is produced in excess of the amounts permitted by state regulatory bodies, and that after the committee has completed its report, including its recommendations, that these recommendations will be passed on to those engaged in the petroleum industry in each of the oil producing states, for such consideration and action as they may deem advisable in each state.

Oil shale conference to be in Glasgow June 6-11

Arrangement for presentation of 33 papers is announced for the Conference on Oil Shale and Cannel Coal scheduled June 6-11, inclusive, in Glasgow, Scotland, according to a program received from W. H. Cadman, Anglo-Iranian Oil Company, Limited, convener of the conference. The conference, to be held under auspices of the Institution of Petroleum Technologists, will be presided over by Sir Thomas H. Holland, a past president of the institution.

In addition to the 33 definitely fixed papers, six others have been proposed, but not definitely fixed.

West Coast A. P. I. has school program

To assist the school districts in the various oil producing centers in California in presenting study courses on subjects of particular interest to oil field workers, a Topical Committee on Vocational Training has been appointed by the American Petroleum Institute, Pacific Coast District, to assemble and prepare pertinent text material, to develop a systematic training of qualified personnel as instructors, and to stimulate interest in the vocational training program throughout the state. Courses of study are already being given during the current term in the school districts of Brea, Huntington Beach, Long Beach, Bell, Bakersfield, Taft, Coalinga, Santa Maria, Santa Barbara and Ventura. It is proposed to augment the present curriculums with additional study opportunities on such matters as drilling practices; production practices; steam power engineering; gas engine maintenance; gasoline plant operation; and applied mathematics.

H. W. HOOTS
who was elected vice president of the American Association of petroleum geologists at its annual meeting in March, is chief geologist for Richfield Oil Corporation. Through error it was stated in our issue of March 21 that Hoots was with Union Oil Company.

Tulsa purchasers meet April 11

The Purchasing Agents Association of Tulsa April 11 will hear George P. Brockway, president of the National Purchasing Agents Association. Brockway's talk will deal with formation of the association, the objectives, permanent and current, and the manner of its function. The meeting will be open to those interested.

Tulsa A.P.I. chapter hears of small holes

Nearly 200 members of the Northeast Oklahoma chapter, The American Petroleum Institute, gathered at the Mayo hotel in Tulsa April 5 to hear drilling engineers from three major companies discuss their experiences with "small hole" drilling units.

The chapter also voted to present a resolution at the A.P.I. mid-year meeting, to be held at Wichita, Kansas, May 23 to 25, seeking to bring the meeting to Tulsa in 1939.

Speakers included C. B. Donovan, drilling engineer with Carter Oil Company; Don Auld, drilling engineer with Phillips Petroleum Company at Bartlesville, and W. M. Morrison, drilling engineer for Shell Petroleum Corporation, Tulsa. Subject under discussion was "Exploratory Drilling—Late Developments and Future Possibilities."

F. W. Floyd, vice president of Carter Oil Company and chairman of the chapter, presided. The program was arranged for by Geo. M. Vandaveer.

National Petroleum Association—change of date

An announcement of the National Petroleum Association says:

"Owing to many requests to avoid the conflict with Good Friday the session on refiner-jobber relations originally scheduled for that morning will be held on Wednesday afternoon, April 13, at 2 p. m. There will be no session on Friday. The group session of the Department of Manufacture on "Propane Treatment of Lubricating Oil Stocks" will be held on Wednesday, April 13, at 4:30 p. m. Otherwise there will be no change in the program.

"The meeting will close with the fellowship supper on Thursday, April 14, at 6:30 p. m. (a fine entertainment at which we will be the guests of the Canfield, National and Sohio companies). This will make it possible to take late evening trains on Thursday."

Tulsa chemists hear Whitemore April 16

The Oklahoma section, American Chemical Society, is planning a meeting for April 16, to be held in the Chamber of Commerce rooms, Tulsa building. Speaker will be Dr. Frank C. Whitemore, president of the American Chemical Society, whose subject will be "Hydrocarbons." Whitemore, dean of chemistry and physics at Pennsylvania State College, was awarded the Nichols medal in 1936 for outstanding work in chemistry. The meeting is open to all chemists, engineers and those interested in the subject.

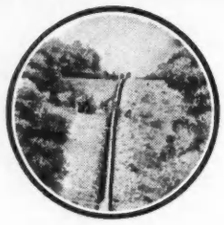
Mineral conference at Los Angeles in fall

The Western Mineral Conference, which is expected to attract 3000 to 4000 mining men and their families from all parts of the country, will be held in Los Angeles next fall. The tentative date set is the week of October 24. Sessions will be held at the Ambassador and Biltmore hotels with mining machinery exhibits at the Ambassador.

C. N. G. A. session on compressor operation

Compression operation and maintenance were the topic of discussion at the April meeting of the California Natural Gasoline Association at Los Angeles April 7. Alex L. Robb, consulting engineer, presented a paper entitled, "Values—How Important Are They?" A second paper, "Getting the Most Out of Piston Rings." These papers represent a substantial contribution to the industry.

PIPE LINE NEWS



Oklahoma increases pipe line tax valuations

Several large pipe line companies received word last week that the Oklahoma state board of equalization had tentatively approved increased tax assessments on the firms. The higher assessments, recommended by the Oklahoma tax commission, are subject to protest by the companies.

Cities Service Gas Company, which showed a tax return of $6,780,330, was increased $291,250 above last year's assessment to $8,585,000. Others included Great Lakes Pipe Line Company, increased from $1,562,750 to $1,800,000; Continental Pipe Line Company, increased from $1,254,000 to $1,367,500; Magnolia Pipe Line Company, increased from $3,533,750 to $3,543,750. One reduction was noted, that of Empire Pipe Line Company, which was reduced from $2,070,000 to $2,048,000.

Santa Maria oil being sought

Los Angeles.—The oil produced in the Santa Maria Valley oil field is sought after because of its asphaltic base. According to current reports a company is interested in an outlet for this crude and has several representatives in eastern seaboard territory endeavoring to make deals with small refining companies to develop a broader market.

Santa Maria Valley field has a daily potential of approximately 130,000 barrels and some companies are offering property owners a cash bonus by the month to let them delay drilling offset wells, as the field has reached a point where production men believe it will be necessary to increase the daily allowable. Landowners and royalty-owners are discussing 25,000 barrels per day as a basis which will probably be acceptable during the summer months.

Revive talk of Standard line to Schuler field

Shreveport.—Talk has been revived that Standard Oil Company of Louisiana will lay a pipe line to the Schuler field, Union County, Arkansas, right-of-way for which was surveyed several months ago. At present Schuler oil is purchased by Lion Oil Refining Company and Root Petroleum Company. The latter plans to add to its refinery at El Dorado immediately.

Although Standard Oil Company of Louisiana at present is buying output from Kerr-Lynn Oil Company's Barnett 1, Section 14-17-20, Columbia County wildcat Permian lime producer near Magnolia, reports are heard that Arkana Transit Company may tie into the well, as its Haynesville-Stephens 6-inch line passes within 3 miles of the well. At Haynesville, Arkana's line connects with Arkansas Pipe Line Company's trunk to Shreveport. Arkana is owned by Ohio Oil Company and Arkansas Fuel Oil Company. A tariff of 7½ cents has been posted to transport the Kerr-Lynn oil to Haynesville.

Freeman W. Burford's casinghead plant in Miller County, Arkansas, has been conected to Shell Petroleum Corporation's U. S. Government lease in Section 3-23n-16w, Caddo Parish, Louisiana. Standard Pipe Line Company has conected into W. M. Layton's Miller County, Arkansas, Rodessa leases. Three thousand barrels of oil in storage at a loading rack was pumped back to the lease and sold to Standard, which also has been offered 50,000 barrels Layton, while operating under an injunction, transported by rail to Goodhope, Louisiana.

Texas production declined in February

A report issued last week by V. E. Cottingham, director of production for the Texas Railroad Commission, showed that Texas produced 35,086,592 barrels during the month of February, which was an average of 1,253,093 barrels per day, 45,746 barrels daily less than was produced in the preceding month of January. The reduction was caused by the fewer number of days in February.

The total allowable for the month was 35,632,400 barrels, an average of 1,272,585 barrels daily. The average production per well for the month was 15,886, which was 3,441 barrels less than the average for February in 1937.

The Commission reported 78,878 producing wells, an increase of 612 over January. This included 31,764 wells flowing and 47,114 wells on the pump.

The total pipe line runs were 34,888,212 barrels. Tank cars carried 46,512 barrels, 127,290 barrels were moved by truck, 29,736 barrels were used for fuel and 28,286 barrels were used for miscellaneous purposes. Lease storage declined 95,724 barrels during the month.

A comparison of production in February, 1937, and February, 1938, is shown in the accompanying table.

Thompson opposes any new taxes

Texas Railroad Commissioner Ernest O. Thompson last week issued his platform for Governor, and declared that in his opinion no new taxes were needed at this time.

He admitted, however, that additional funds might be required to take care of the Teacher's Retirement Fund and aid to the blind and dependent children. He advocated raising these additional funds from natural resources if taxes now assessed are insufficient.

Too big to classify

Compilers of industrial records find it impossible to classify the petroleum industry! Other industries are listed under mining, manufacturing, transportation, or trading, but the petroleum industry is a top-notcher in all of them.

The oil produced in 1936, believe it or not, was worth more than all the gold mined that year. It was valued at more than a billion dollars. The gold was worth a mere 150 million.

Among more than 300 manufacturing industries listed in the last census, petroleum refining holds fourth place. Petroleum pipe lines rate four stars in any transportation report. They carry a billion barrels of oil annually. Ranking first among shippers of manufactured products by rail, the industry contributes more than $250,000,000 to rail freight revenue every year. Also it holds first place as a producer of tax revenue for the government.

State gasoline taxes now cost more than state real estate, personal property, corporate income and individual income taxes combined.

Texas February Production in 1938 and 1937

	1937	1938	Increase
Number of Operators	4,739	5,235	496
Number of Leases	13,795	15,308	1,513
Flowing Wells	27,929	31,764	3,835
Pumping Wells	40,989	47,114	6,125
Total Wells Producing	68,918	78,878	9,960
Lease Storage (Beginning)	4,360,218	4,692,811	332,593
Total Allowable	38,382,316	35,632,400	2,749,916*
Daily Average Allowable	1,370,797	1,272,585	98,212*
Daily Average Allowable per Well	19.89	16.13	3.76*
Indicated Production	37,295,155	35,086,592	2,208,563*
Daily Average Production	1,331,970	1,253,093	78,877*
Daily Average Production per Well	19.33	15.89	3.44*
Runs to Pipe Lines	36,991,259	34,888,212	2,103,047*
Tank Car Movements	20,752	46,512	25,760
Truck Movements	109,301	127,290	17,979
Used as Fuel	33,717	29,736	3,981*
Miscellaneous Uses	18,112	28,286	10,174

* Decrease.

Control Holds Prices Firm

Production control, strengthened by restriction of pipe lines, holds crude prices firm; refined products steady with recent gains.

THE oil industry's markets have continued generally steady, despite some minor fluctuations of refined oil prices. And the immediate outlook is hopeful, in view of current strict control of crude oil production, similar restraint at the refineries, and fairly satisfactory inventory situations.

Crude oil prices remain relatively firm because of the strict curtailment of production, not only through the state proration programs, but also through proration of purchases by pipe line companies in various districts, including New Mexico, Oklahoma, and Kansas fields and the Pennsylvania grade district.

Prices Steady

The natural gasoline market has continued firm, and prices are, in some instances, slightly higher now than a few weeks ago.

Prices of refined gasoline also are steady, following the recent advances, and there has been some tendency of the prices to improve further, especially in the Chicago district.

Prices of kerosene and tractor fuel are firm, in reflection of increasing demand which is attending the expansion of agricultural activity.

The markets for light fuel oils and range oil have benefited recently from the temporary cold weather, and prices have held steady. But the demand for heavier fuel oils has continued sluggish because of the protracted general business inertia.

Crude Oil Purchases Reduced

Difficulty in keeping crude oil production properly balanced with market requirements, because of less favorable trends of consumption, has been further evidenced in the past few weeks by new reductions of crude purchases by pipe line companies, to quantities below the prevailing state allowables.

Such reductions were extended for the first time into New Mexico when Shell Petroleum Corporation announced that it would restrict purchases there, as well as in Oklahoma, effective April 10, and until further notice. Previously, Carter Oil Company had announced a similar policy in purchasing crude throughout Oklahoma, when the state allowable was left at 475,000 barrels daily for April, as in March. Some other purchasers earlier this year inaugurated policies of taking only certain percentages of the allowables in Oklahoma and Kansas.

These purchasing programs have been adopted because the state allowables have not been sufficiently low to hold production down within the market requirements of the purchasing companies. It is true that the state allowables have conformed fairly well with the Bureau of Mines estimates of demand. But apparently, the bureau has been over-estimating demand lately, just as it was for a time last year under-estimating the then sharply rising consumption. These apparent errors in making the estimates are generally regarded as arising out of the fact the bureau bases its forecasts to a considerable extent on past trends of consumption, which lose some of their ordinary significance when abnormal changes in business conditions are occuring.

Hopeful View Taken

Some encouragement was offered recently by a report of the Standard Statistics Company, which took the view that it is becoming increasingly probable that the basic Mid-Continent price of crude oil will be maintained the rest of this year, despite present relatively large inventories of refined products. The Mid-Continent price structure, it was pointed out, affects the welfare of a large part of the industry.

In support of the view, the report stated that the statistical position of crude oil is relatively strong, the present inventories being not far in excess of the estimated minimum working requirements of the industry. The report also referred to the current relatively low level of crude oil production, despite the fact that the volume of petroleum consumption is running slightly higher than the 1937 levels.

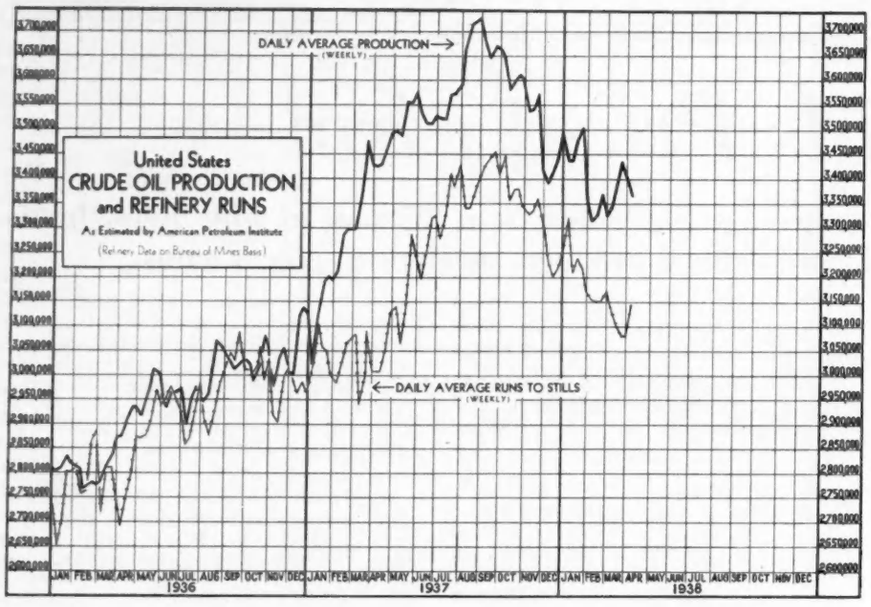
The Standard Statistics Company's report also pointed out that political situations in Texas also probably are conducive to the maintenance of the existing prices. Although conceding that the refined oil markets have been weakened by excessive inventories, the report mentioned as significant the fact

Trends of United States Production and Stocks

Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports

WEEK ENDED	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	Gas & Fuel Oil Stocks (Barrels)
January 2, 1937	3,121,400	3,030,000	287,659,000	62,661,000	106,330,000
January 30	3,194,050	2,995,000	285,384,000	69,540,000	102,078,000
February 27	3,296,100	3,085,000	288,121,000	78,786,000	99,534,000
March 27	3,431,300	3,060,000	293,587,000	83,538,000	96,591,000
April 24	3,496,400	3,125,000	300,737,000	82,303,000	94,100,000
May 29	3,573,000	3,245,000	306,445,000	78,758,000	96,139,000
June 26	3,529,600	3,235,000	307,679,000	75,427,000	100,395,000
July 31	3,591,900	3,425,000	308,250,000	70,872,000	108,209,000
August 29	*3,731,450	3,425,000	309,506,000	66,997,000	112,111,000
September 25	3,666,300	*3,455,000	307,974,000	65,620,000	116,472,000
October 2	3,647,450	3,400,000	309,036,000	65,266,000	117,076,000
October 30	3,602,950	3,345,000	307,140,000	66,836,000	121,070,000
November 27	3,425,800	3,325,000	304,156,000	68,544,000	121,616,000
December 25	3,492,600	3,245,000	303,294,000	74,437,000	118,659,000
January 1, 1938	3,436,600	3,320,000	303,468,000	77,291,000	118,660,000
January 29	3,357,650	3,170,000	304,286,000	84,844,000	118,793,000
February 26	3,322,800	3,170,000	305,167,000	90,719,000	120,958,000
March 5	3,339,700	3,130,000	304,527,000	92,151,000	122,471,000
March 12	3,382,100	3,100,000	305,566,000	93,084,000	122,818,000
March 19	3,433,550	3,080,000	306,380,000	*93,192,000	122,067,000
March 26	3,405,600	3,080,000	307,557,000	92,858,000	122,969,000
April 2, 1938	3,367,250	3,145,000	.....	92,924,000	123,621,000
April 3, 1937	3,422,350	3,005,000	†293,587,000	83,157,000	95,805,000
Change in past year	—1.3%	+4.6%	+4.7%	+11.8%	+29.0%

* All time peak. † Stocks, March 27, 1937.



that refinery production lately has been reduced to more moderate proportions.

Statistics Remain Favorable

The latest available statistics on the petroleum industry reflect the generally satisfactory situation now prevailing.

Crude oil production and refinery operations have continued under strict regulation, and the storage situation has been affected favorably.

Crude oil production, for the second consecutive week, was, in the 7-day period ended April 2, lower than in the corresponding period of last year. Averaging 3,367,250 barrels daily in the week ended April 2, 1938, crude oil production was 1.3 percent smaller than in the similar period last year.

This low level of crude production, in the face of the fact that petroleum demand has continued to run slightly higher than last year, is desirable, inasmuch as it is helping to correct the present over-supply of gasoline. It has been pointed out that surplus gasoline only represents surplus crude oil in the refined form, and the present exceptionally strict regulation of crude oil production is having the effect of bringing the gasoline stocks into a more economical relation to market demand.

The strict crude control has been accompanied by similar restraint at the refineries, and crude oil runs to stills, in the week ended April 2, averaged 3,145,000 barrels daily, or 4.6 percent more than in the similar period last year. This gain over a year ago is about in line with the increase in petroleum consumption.

Crude oil stocks in the United States totaled 307,557,000 barrels in the week ended March 26, this year, which was 4.7 percent more than the supply on hand on the corresponding date last year.

Gasoline stocks remained virtually unchanged in the week ended April 2, rising slightly to 92,924,000 barrels. At that level they were 11.8 percent larger than one year previously.

Fuel oil stocks continue excessive, having amounted to 123,621,000 barrels on April 2, or 29 percent more than one year previously.

Natural Gasoline

Natural gasoline, grade 26-70, was priced generally in the Mid-Continent markets, f.o.b. refineries, at 2½ to 2⅝ cents a gallon, and sales were reported at 2⅝ cents f.o.b. Breckenridge, Texas.

Refinery Prices for Gasoline

U. S. motor gasoline ranged in the Oklahoma market last week about as follows: 62 octane and below 4⅜ to 4½ cents a gallon; 63 to 69 octane, 4⅝ to 4¾ cents; 67 to 69 octane, 4⅞ to 5 cents; and 70 to 72 octane, 5¼ to 5½ cents.

In East Texas the most common gasoline, 60-62 400 end-point, was priced generally around 4½ cents a gallon.

Kerosene prices f.o.b. Oklahoma refineries ranged from 4⅛ to 4¼ cents a gallon for the 41-43 water white grade, and from 4⅜ to 4½ cents for the 43-44 water white grade. Corresponding prices in the Chicago market were 4⅛ to 4¼ cents and 4¼ to 4½ cents.

Fuel Oils Steady

Fuel oil prices were, in numerous instances, ⅛ cent a gallon lower last week than in the previous week. In the Chicago market range oil was priced from 3⅞ to 4⅛ cents a gallon. The No. 1 white oil was priced from 3⅞ to 4 cents, and No. 1 straw from 3¾ to 3⅞ cents. No. 2 straw was 3½ to 3¾ cents. No. 3 oil was 3⅜ to 3½ cents. No. 4 was $1.05 to $1.10 a barrel to domestic consumers and 95 cents to $1.05 to industrial buyers. No. 5 oils were 65 to 75 cents for domestic and 60 to 65 cents for industrial sales. The No. 6 oil was quoted to the usual industrial customers at 45 to 55 cents a barrel.

CRUDE OIL PRICES

Complete tables of prices paid for crude oil at the well in principal fields is shown on page 66 in the issue of April 4. This schedule will appear only in the first issue of each month.

Summary of Wells Completed in the United States Week Ending April 9, 1938

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total, 1938	Total this Date, 1937
Alabama	....	....	....	....	.....	....	1
Arkansas	6	5	....	1	4.216	62	21
California	21	17	....	4	21,366	304	332
Colorado	....	....	....	....	.....	3	6
Florida	....	....	....	....	.....	....	....
Illinois	....	....	....	....	.....	204	11
Indiana	....	....	....	....	.....	30	33
Kansas	22	16	2	4	11,968	517	589
Kentucky	10	5	2	3	139	192	51
Louisiana	18	11	2	5	4,810	299	185
Michigan	....	....	....	....	.....	208	209
Mississippi	....	....	....	....	.....	7	6
Montana	....	....	....	....	.....	13	22
Nebraska	....	....	....	....	.....	....	....
New Mexico	14	11	....	3	7,377	145	190
New York	....	....	....	....	.....	15	3
Ohio	15	7	4	4	121	265	453
Oklahoma	38	28	3	7	12,481	591	786
Pennsylvania	3	....	3	....	.....	57	45
Tennessee	....	....	....	....	.....	1	....
Texas	269	185	7	77	276,998	3,612	3,784
Utah	....	....	....	....	.....	....	....
West Virginia	9	....	4	5	.....	239	241
Wyoming	....	....	....	....	.....	24	31
Total this week	425	285	27	113	339,476	6,788	6,999
Total last week	444	315	44	85	366,903	.....	.....
Total this year	6,788	4,608	623	1,557	5,616,208	....	.....

Comparison of Permits Granted for New Wells

STATE	Week Ending April 9	Total this Mo.	Total this Year	Total this Date Last Year	1937 Year Total
Arkansas	6	12	69	47	240
California	18	34	346	390	1,584
Louisiana	27	50	362	225	1,227
Kansas	38	71	473	638	2,663
Michigan	....	14	170	241	958
Oklahoma	40	77	568	745	2,711
Texas	612	732	4,122	4,824	17,238
Total	741	990	6,110	7,110	26,621

Slight Production Increase

Crude yield in United States last week was up 31,536 barrels to top bureau's estimate of requirements by 41,068 barrels daily.

OUTPUT of oil fields of the United States rose 31,536 barrels daily above the week ending April 2 to register output of 3,402,768 barrels, which was 41,068 barrels a day more than the market requirements estimated by the Bureau of Mines for April.

The increase in output over the previous week resulted from gains in Oklahoma, Texas and Kansas that outweighed small declines in California and Louisiana.

Oklahoma registered an increase of 26,125 barrels, having averaged 518,000 barrels a day. That was 8500 barrels a day less than the Bureau of Mines recommendation and 43,000 barrels more than the state allowable.

Texas, as usual, showed a small fluctuation, having increased its daily production by 5750 barrels to 1,318,400. However, the daily output remained under the Bureau of Mines estimate by 11,400 barrels and under the state allowable by 37 barrels a day.

Kansas last week averaged 170,445 barrels daily, 4070 barrels more than in the previous week, and 2555 barrels a day less than the Bureau of Mines recommendation and the allowable prescribed by the state.

California output was down 559 barrels daily, having averaged 714,498 barrels a day. That was 15,798 barrels more than the federal allocation and the recommendation of the Central Committee of California Oil Producers.

Louisiana last week averaged 261,275 barrels daily, or 2100 barrels less than in the previous week. The daily production, however, was 21,475 barrels above the Bureau of Mines estimated demand and 9000 barrels above the state allowable.

United States Crude Oil Production

Estimates Compiled by The OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Recommendation (Daily in April)	State Allowable in April	BARRELS DAILY FOR WEEK ENDED April 9	April 2
TEXAS—				
Texas Panhandle	.....	.....	69,700	72,500
North Texas	.....	.....	72,200	70,200
West Central Texas	.....	.....	28,500	28,350
West Texas	.....	.....	189,200	187,400
East Central Texas	.....	.....	98,700	98,550
East Texas Field	.....	.....	429,400	429,050
South Texas	.....	.....	228,800	227,100
Texas Gulf Coast	.....	.....	201,900	199,500
Total Texas	1,329,800	1,318,437	1,318,400	1,312,650
CALIFORNIA—				
Long Beach	.....	.....	58,100	56,800
Santa Fe Springs	.....	.....	37,100	36,600
Huntington Beach	.....	.....	36,000	35,300
Dominguez	.....	.....	26,100	26,500
Inglewood	.....	.....	16,000	15,600
Ventura Avenue	.....	.....	37,500	40,600
Seal Beach	.....	.....	9,850	10,500
Midway-Sunset	.....	.....	55,200	62,600
Elwood	.....	.....	6,900	7,000
Kettleman Hills	.....	.....	81,600	85,600
Mountain View	.....	.....	12,300	12,500
Playa del Rey	.....	.....	7,050	7,100
Wilmington	.....	.....	103,450	97,000
Others	.....	.....	227,348	221,357
Total California	698,700	*698,700	714,498	715,057
OKLAHOMA—				
Oklahoma City	.....	.....	137,300	102,700
Seminole Area	.....	.....	99,350	101,375
Crescent	.....	.....	6,150	7,025
Lucien	.....	.....	11,975	12,575
Fitts	.....	.....	55,800	59,725
Edmond	.....	.....	6,650	6,800
Moore	.....	.....	7,175	6,925
Others	.....	.....	193,600	194,750
Total Oklahoma	526,500	475,000	518,000	491,875
LOUISIANA—				
North Louisiana	.....	.....	79,175	80,275
South Louisiana	.....	.....	182,100	183,100
Total Louisiana	239,800	252,275	261,275	263,375
KANSAS—				
Ritz-Canton	.....	.....	6,475	6,550
Chase	.....	.....	5,660	5,675
Hollow-Nikkel	.....	.....	3,750	3,775
Sedgwick	.....	.....	3,875	3,850
Burrton-Haven	.....	.....	11,415	11,425
Lorraine	.....	.....	2,750	2,675
Russell County	.....	.....	29,450	27,550
Silica—West	.....	.....	13,250	12,525
Silica—South	.....	.....	2,600	2,400
Others	.....	.....	91,220	89,950
Total Kansas	173,000	173,000	170,445	166,375
NEW MEXICO	106,000	106,000	104,950	104,500
MICHIGAN	51,400	.....	52,800	52,300
ARKANSAS	40,000	.....	53,500	54,400
MOUNTAIN STATES—				
Wyoming	46,600	.....	49,600	51,900
Montana	12,700	.....	13,100	12,300
Colorado	4,600	.....	4,350	4,150
Total Rocky Mountain States	63,900	.....	67,050	68,350
EASTERN STATES—				
Pennsylvania Grade	.....	.....	80,950	81,200
Southern Illinois (New Pools)	.....	.....	27,400	27,600
Illinois-Indiana (Old Pools)	.....	.....	12,600	12,750
Others, Eastern	.....	.....	20,900	20,800
Total Eastern States	132,600	.....	141,850	142,350
Total United States	3,361,700	.....	3,402,768	3,371,232

* Recommendation of Central Committee of California Oil Producers.

Major buyers post New Mexico prices

Artesia, New Mexico. — Effective April 1, The Texas Company and Sinclair Prairie Oil Marketing Company posted a flat price of 90 cents per barrel for crude to be purchased in the Artesia district, Eddy County, and the Maljamar pool, Lea County. The above price is the same as that used by local buyers.

A maximum of 3000 barrels daily will be absorbed by the new buyers, and runs will be handled through the system of The Texas-New Mexico Pipe Line Company. This oil was previously included in a 4000-barrel daily quota tagged for export contracts lined up by the Trans-Pecos Pipe Line Company, which was recently forced to suspend oil purchases because of surplus crude stocks. Market relief for this somewhat isolated section of New Mexico was arranged some weeks ago.

What Are Florida's Chances?

By WILLIAM GREGG BLANCHARD
Geologist, Geophysicist and Engineer

NINE years ago the writer set out to search for the answer to Florida's oil bearing possibilities.

All Florida is a part of the Gulf Coastal Plain.

The "backbone" or "ridge" of the peninsula, reaches its highest point in the hilly country comprising the central citrus producing section of the state. Here elevations of as much as 325 feet are encountered, with rolling descent in all directions leaving a terrain dotted with thousands upon thousands of fresh water lakes. From Lake Okeechobee (the largest lake wholly within any one state of the union) south, is a flat lying plain, underlain for the most part with pure white oolitic limestone (Pleistocene). This plain, the Florida Everglades, starts with an elevation of 18 feet at the lake and dips regularly and evenly to the seas on the west, the south, and the east.

Regional Geology

In pre-Cambrian times the Florida province was probably the southern extremity of ancient Appalachia. Prodigious folding, due to foreshortening of several hundred miles between the ancient Appalachian and Antillian geoanticlines, left the province as a mountainous terrain striking, I am inclined to believe, not parallel to the present long axis of the peninsula, but northeast and southwest, roughly paralleling the Appalachians and our present Atlantic coast line. The run of time weathered this ancient terrain to a comparatively flat, peneplaned, surface (Florida's "crystalline" or metamorphic "floor") which, commencing at the southern extremity just north of Cuba, then sank beneath the sea as the Gulf of Mexico took shape. This sinking of the Florida "floor" was hinged along a "fall line" which strikes northeast-southwest across Georgia about 100 miles north of the Florida boundary. Gradually then, the province "downwarped" to the south from this "hinge line" into a gentle southward dipping monocline. With this sinking of the Florida "floor" beneath the waters of the Gulf, several thousand feet of marine deposits were then laid down upon its top and in these younger sedimentaries lie, of course, our hopes for oil.

The only marked, exposed, interruption to this southward dipping monocline came with the gentle "doming" of the formations beneath the central portion of the peninsula, as they later rose to form the Ocala Uplift, shown at 4 in Figure 1 and also in Figure 3. This uplift, marked by an Ocala (Jackson) Eocene inlier, is the most striking exposed regional feature along the entire Gulf Coast, east of the Sabine Uplift of northern Louisiana.

Here a rough comparison may be in order. Referring to Figure 1, I have indicated at (1) the possible location of an off shore deep from beneath which the magma could have been discharged to a point beneath where now lies Shreveport, Louisiana, there raising the surrounding country into the Sabine Uplift, shown at (2). As to this Sabine Uplift, and on account of it, man has found 15 or 20 fields upon its ancient top and East Texas, the world's greatest known field, upon its western flank. Coming now to the Florida province, I have indicated at (3) the possible location of an off shore deep from beneath which the magma could have been discharged to a point beneath where now lies Ocala, Florida, there raising the surrounding country into our Ocala Uplift, shown at (4).

Stratigraphy

All the surface of Florida is blanketed with post Eocene formations (Pleistocene, Pliocene, Miocene and Oligocene) save for an inlier of Ocala (Jackson) Eocene limestone near the mid point of the peninsula which, covering an area approximately 150 miles northwest-southeast, along the axis of the peninsula, by 75 miles at right angles thereto, marks the exposed crest of the Ocala Uplift.

As shown by the Florida stratigraphic section in Figure 2 (running from a point on the Georgia line, southeast down through the peninsula to Miami) this post Eocene blanket approximates 300 feet in thickness at the Georgia line, disappears a little further south on the crest of the Ocala Uplift, and reaches a thickness of approximately 1000 feet in the Miami area at the south end of the peninsula.

The Eocene section which has never been reliably divided into Ocala (Jackson), Claiborn, Wilcox and Midway, has been completely drilled through 3 times near the Georgia border at Monticello (1), Burns (2), and Woodville (3), in Figure 2 where it approximates 2000 feet in thickness; it has been drilled through 3 times on the crest of the Ocala Uplift; at Cedar Key (4), Fairfield (5), and York (6), also shown in Figure 2, where it approximates 2700 feet in thickness. Once only has it been completely penetrated on the south flank of the Ocala Uplift; at South Lake (12), in Figure 2, where it showed a thickness of 3400 feet. This last is the southernmost Florida well in which the entire Eocene section has been drilled through. The Kendall well (20 in Figure 2) 6 miles southwest of Miami, reaching a total depth of 5400 feet, was, as far as could be determined, still in the Eocene at the bottom.

Near the base of the Eocene lies an interesting section of massive anhydrite, which starting on the Ocala Uplift with a thickness of 600 feet seems to extend uninterruptedly to the south end of the peninsula, where its top is reached at 3700 feet.

In the north half of the peninsula, an upper Cretaceous section has been penetrated by 7 wells, none showing Cretaceous material older than Tuscaloosa. Subsequent drilling at the south end of the peninsula may add Lower Cretaceous and even Jurassic and Triassic to the Florida section before the "floor" is finally reached.

As to Florida's basement rocks, the "floor," they were likely entered at 3700 feet in the Fairfield well (5 on Figure 2); they were definitely entered at 4000 feet in the York well (6 on Figure 2) where they were mistakenly penetrated to a depth of 6180, and they were definitely entered at 6102 in the South Lake well (12 on Figure 2).

We therefore seemingly have a section of sedimentaries of several feet in thickness from the Georgia line down to and across the Ocala Uplift and then the section gradually thickens to the south to that point beneath the lower peninsula where the "floor" commences its rise into the Cuban arch.

Lithology

The surfacial deposits of the peninsula comprise a heterogeneous scattering of sands, gravels, clays, marls and soft limestones all of Pleistocene, Pliocene, Miocene and Oligocene ages, save for the Ocala (Jackson) Eocene inlier at the mid point of the peninsula. Except for mentioning the possibility of contouring on the contacts of some of these divisions (in areas off the top of the Ocala Uplift) we will dismiss their further discussion for our present purposes.

Coming now to the Eocene with a known thickness of 2000 feet at the Georgia line and increasing in thickness to something over 5400 feet at the south end of the peninsula, we find this entire section to be predominantly of varying types of limestone, except for thin sand sections and the massive anhydrites section near the base running throughout the south three quarters of the peninsula.

These limestones, many of excellent porosity, vary in color between white, buff, gray, brown and even black and run from flint hardness to soft chalks. All types of crystallinity are present, cryptocrystalline, crinoidal and recrystallized. Some are argillaceous, some dolomitic, some siliceous. Thick sections of coquina and thicker sections of oolitic lime abound.

As to the some 600 feet of massive Eocene anhydrite, with its normal stringers above and below, like the well known Glen Rose (Cretaceous) anhydrite, it varies in shades of coloring from dark browns and grays to light pinks and whites.

In Oil Development Company of Florida's recent South Lake well (12 on Figure 2) the top of the massive Eocene anhydrite was found at 2434 feet (elevation 120 feet) and it remained therein to 3066 feet. Immediately below this 600-foot section of massive anhydrite a 300-foot oolitic limestone section of varying porosity was penetrated. Here then we have a situation that somewhat parallels the Rodessa (La.) field reservoir horizons.

Interposed throughout the Florida Eocene lime section are small breaks

of lignitic material near the top and small breaks of dark shales near the bottom.

Coming now to the Cretaceous section, usually marked at the top by entrance into the Selma chalk. This soft white, to gray white, chalk we found to be 1200 feet in thickness (total depth 3454 to 4654) in the South Lake well and at the base of this chalk the first shale breaks of any magnitude commenced to show up. In this same well at 5322 feet, the first glauconitic green sands were encountered probably marking the top of the Eutaw.

South of the South Lake well nothing is known of the Cretaceous section because it has never been penetrated. North of this well the Cretaceous chalk and limes merge more and more into sands, green sands and shales as one approaches the Georgia state line.

And now for the basement complex, the "floor," in approaching which one encounters a heavy marker of red weathered material. In the York well (6 on Figure 2) the operators mistakenly penetrated the "floor" from 4000 feet to 6180 feet where the well was bottomed. I have a good spread of samples taken throughout this lower section and careful studies by eminent petrologists show the material to be of gray, to white, quartzite with a plentiful amount of mica schists and some biotite.

At the South Lake well the approach of the floor was heralded by our encountering the well's first true non calcarious sand of any notable thickness (Arkose-granitic decomposition) at 6050 feet and immediately below this sand, residual red beds of sands and clays to a depth of 6102, where flesh red granite was encountered. This granite is an Alaskite, consisting of 50 percent orthoclase feldspar, 40 percent quartz and about 10 percent oligoclase with small amounts of magnetite and of biotite. Here the "floor" exists as a granitic, plutonic, plug in the metamorphics, a confirmation of magnetic studies. As the contact between the granite and the sedimentaries showed no contact metamorphism whatsoever, it follows that the arrival of the magma at this point preceded middle upper cretaceous times.

FIGURE 1

Showing the geographical position of the North Louisiana Sabine Uplift at 2, and Florida's Ocala Uplift at 4, together with position of possible off-shore deeps 1 & 3, in juxtaposition, from under which the magma could have moved northward and eastward, respectively, to genetically cause the two somewhat similar uplifts.

Paleontology

In addition to the various lithologic markers in the Florida section, the operator here finds an abundance of ancient fossils, both microscopic and those visible to the naked eye. We have the Asterocyclina and the Discocyclina marking perhaps the true top of the Ocala limestone and numerous species of Lepidocyclina throughout that section, the Laganum Dalli marking perhaps the bottom of the Ocala. Probably the best markers in the Eocene below its top are the Dictyoconus Gunteria Moberg, and specie of Borelis and Coskinolina. The upper Cretaceous of Florida is marked off from the Eocene above by a faunal break which is easily recognizable. Exogyra and Ostrea Cretaceous are present and the fifty to one hundred species of foraminifera within the uppermost part of the upper Cretaceous seem to correlate these beds with the Velasco of Mexico. Specimens of the brachipod genus Terebratulina found at 2645 feet in the Monticello well (1 on Figure 2) possibly assigns this section to the lower part of the Upper Taylor. A Fabularia was found below 4000 feet in the Tamiami Trail well (18 on Figure 2) showing the material at that depth to be still Eocene.

Magnetic Studies

Most of the state has been covered with vertical magnetic intensity surveys and it is the writer's opinion that the magnetic method of geophysical attack is well adapted to that part of the Florida province represented by the peninsula itself. For the most part the magnetic surveys have been conducted by Gulf Oil Company, by Ohio Oil Company, by Wm. M. Barret, Inc., of Shreveport, by Internal Improvement Board of the State of Florida and by the writer.

In the panhandle, running westward from Tallahassee to Pensacola, magnetic studies show a mass of small,

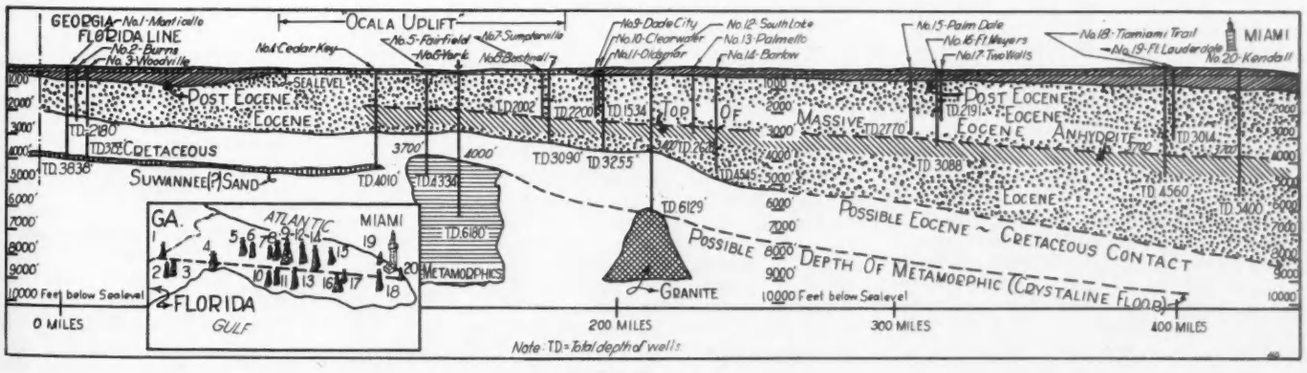


FIGURE 2

Florida stratagraphic section running from the Georgia line southeast to Miami, Fla., showing the peninsula's test wells, their locations, depths and principal contacts.

more or less regular, non interpretable, vertical intensity anomolies of the order of 100 to 150 gammas closure. Evidently in this section of the state some deposits of magnetic materials in the near subsurface formations, distort and blot out the deeper picture. But eastward from Tallahassee down and across the Ocala Uplift conditions are quite different, and magnetic studies in this area present to my mind promising possibilities. The doming in the great bend in the Suwannee River, in Suwannee County, north Florida, which the All Floridoil Corporation is about to drill, and which doming is indicated not only by "creekology" and surface geology but by core drilling as well, is plainly featured by a magnetic high of good closure and proper relief. The crest of the Ocala Uplift is also indicated by a magnetically high area. The magnetic trend throughout this entire area indicates that early folding paralleled the Appalachians. At the south end of this area a line of weakness is plainly indicated, with a nesting of igneous intrusives, all of which together with other data may mean that just south of the present south flank of the Ocala Uplift was the southernmost extremity of the old continental land mass.

South of the Ocala Uplift the magnetic studies show different trending and in fact nearly paralleling the Cuban axis.

Much can and will be done with magnetics in the search for Florida structures.

Seismic Investigations

Seismic studies started in Florida in 1933. We found that one receives ample energy return from strata lying even a mile or more below the surface from charges of dynamite running as small as from one quarter to one half pound. We found many reflecting surfaces with singularly definite characteristics. But we experienced much difficulty with the planning of our shot holes and the matching of the strings on these earlier records. During the past year crews on several profiles, were able to match strings on individual records but experienced some difficulty in correlating between shot points. The seismograph, with ample funds and time available for its operation, will play a large part in the future exploration activities within the state.

Gravitational Investigations

Up to the time of the recent advent (May, 1937) of Gulf Oil Corporation into the area of the Florida Everglades, with its gravity meters all the 68 gravity stations throughout the state had been set by the pendulum crews of the United States Coast and Geodedic Survey. Most of these 68 stations were set in the south half of the peninsula and while the resultant control net gives but a sketchy picture, which picture has not as yet been tied in with deep test hole data, still results so far obtained point to the practicability of the gravity method of geophysical attack in the Florida province. In this first work several regional anomalies have been mapped of the order of .05 centimeters per second based on the Bowie formulae of 1917, using Isostatic values of 60 kilometers. Interesting, too, this lower Florida gravity picture, also shows trending nearly parallel to the Cuban axis as does the corresponding magnetic picture and there seems to be some "tie-up" between the magnetic highs and lows and the gravitational maxima and minima, respectively.

Undoubtedly magnetic and gravity anomolies here, will be checked by seismograph and the torsion balance in later work.

Purport of Geological and Geophysical Summaries

Consider now the three necessary requisites for commercial pools, that is, source beds, reservoir rocks and structure.

The thick sections of chalks, marls, algal shales and other marine deposits, underlying not only the emerged Florida peninsula itself but undoubtedly underlying also the formations, down dip, beneath the adjacent Gulf, probably afford ample source beds for the province.

The Florida section is made up of proper sedimentary reservoir rocks of the identical age and of the same general character as are the rocks from which a large portion of the world's oil has been produced. Predominately the Florida section is of limestone. Most of the world's most spectacular wells have been produced in limestone sections.

Undoubtedly a reasonable amount of geophysical work and test well drilling followed by geological study, will deliniate ample structural conditions of the "ingenous instrusive," the "shore line," the "bald head," the "stratagraphic" and of the "slumping" types with even a possibility of, so far undisclosed, compressional folds and fault lines. Further I suggest the possibility of salt dome structures beneath the Florida Everglades at the south end of the peninsula.

Drilling Conditions

Drilling conditions are good in the Florida province. The climate is mild and pleasant the year round, an excellent network of splendid paved highways serves the entire territory. For those who care to use it, ample pine and oak is available for fuel in most parts of the State at a cost of about $2 a cord.

Oil Development Company of Florida's South Lake well, recently bottomed in granite at 6129 in Southern Lake County, had a total well cost of about $40,000 or $6.66 a foot, not counting the cost of pipe, overhead and equipment. This included practically solid coring from 2000 feet to the bottom of the hole. In this well with 9⅝-inch, 40-pound casing set at 2200 feet, we carried 4000 feet of open hole for months at a time without the slightest difficulty or interruption from cavings.

Any operator contemplating a well in Florida should study the immediate subsurface conditions below his location, so as to properly handle surface sands, flint boulders, and pot hole and underground streams and cavities. To avoid costly difficulties and delays in spudding, as dictated by past experiences, we have spudded Lucy Cotton 1 (in the great bend of the Suwannee River) in north Florida and as we will all succeeding wells, with standard spudding equipment, take them down several hundred feet through the troublesome zone and then put on rotary equipment.

Land Ownerships

Florida for the most part, is a State of large blocks of solid single ownerships. One single ownership here holds 1,200,000 acres, several ownerships each hold a million acres and so on down till we finally reach the five-acre tract and the town lot. Your writer has put two separate million-acre blocks here under lease and is now assembling a third. At present the possibility of acquiring large lease blocks here without onorous rentals or burdensome drilling commitments is quite attractive. This condition will probably not prevail much longer as we understand several additional majors and other large interests are to come into the Florida play this year, 1938.

Past Developments

The Florida section shown on Figure 2 shows the important test wells that have been drilled in the province, together with their depths and approximate control contacts.

One Florida well reached a depth of 6180 feet, another reached 6129 feet, three reached 5400 feet. In all, but about 12 important and worthwhile test wells have been drilled in Florida, which in an area of some forty millions of acres is sparce drilling.

The past history of Florida developments was marked by the following milestones: the early discovery of a small amount of wet gas at 4010 feet in the Cedar Keys well (4 on Figure 2); authentic shows of both oil and gas in that and in other wells; Gulf Oil Corporation's magnetic work in West Florida; Ohio Oil Company's magnetic work in the peninsula; the magnetic work of William M. Barret, Inc., of Shreveport; and the seismic work of Petty Geophysical Engineering Company, both of the latter for the writer; the careful drilling, coring, sampling and logging of the South Lake well; and the recent entry of the Gulf Oil Corporation into the area of the Florida Everglades.

Present and Pending Developments

The counties of immediate and pending activity are indicated on map Figure 3. Starting at the north end of the peninsula in Suwannee and Lafayette counties, the writer and his associates (Lucy Cotton and Wm. M. F. Magraw of Miami Beach and New York and J. L. McCord of Florida and Oklahoma) in the Great Bend of the Suwannee River after assembling a hundred thousand acre block on core drilling, geophysics and geology, have spudded in Lucy Cotton 1 as the initial well of that area. Arrangements have been concluded with Helmerich & Payne, Tulsa operators, to complete this and several additional wells on this block.

In Nassau County, just north of Jacksonville, Eugene Brown has his Hilliard well, standard equipped, down to 4000 feet as this is written.

In Levy County, Edward A. Hill, who uncovered the wet gas in the old Cedar Key well, is again going down in the same lease block with rotary, having now reached a depth of 2275 feet.

Coming on down the peninsula to its

FIGURE 3
Map of Florida showing counties in which present and projected activities are centered, the location of the Ocala Uplift as marked by the sea level contour on the top of the Ocala (Jackson) Eocene, and the outside limits of the Florida Everglades lying just west of Miami.

mid-point in southern Lake County, where the South Lake well was completed at 6129 feet, we find an area which will see additional development when certain legal matters now pending pertaining to the land involved are settled.

In the south end of the state in Collier, Lee and Hendry counties, along the southwest coast, we find Gulf Oil Corporation's million acre block assembled and turned to them by Clem S. Clark of Shreveport. While at the tip of the peninsula, Cape Sable, a half million acre block is being assembled for explorations and some projected tests.

In this same south Florida area Robert Burns Campbell, formerly with Humble, now president of Peninsula Oil & Refining Company, is about to spud in a deep rotary test on a 50,000-acre block in Monroe County. And here too the writer with A. C. Preston of Miami has just taken exploration contracts on all the state owned lands in Collier, Broward, Dade and Monroe counties comprising something over a million acres in all.

The Florida Everglades thus becomes the most active area in the state.

I close these Florida notes by saying that, based upon the carrying through of a comprehensive exploration program, including geophysical work, geological study and test well drilling, Florida indeed has a reasonable chance of being numbered among the oil and gas producing states of the Union.

Note:—Comments, criticisms and enquiries addressed to the writer Box 593, Coral Gables, Florida, will be welcomed, acknowledged and answered within the limits of the author's available time for correspondence.

WORLD DEVELOPMENT and TECHNOLOGY

Edited by
WM. V. GROSS, Associate Editor

Mexico's Oil Muddle

[*Continued from page 15*]

However, a telegraphic communication to this publication April 8 from the Mexican capitol stated that only 20 percent of the *profits* from oil exports would be added to the government's fund for paying off the indebtedness.

The telegram also reflected on the part of the government's oil control board an optimistic feeling with reference to the future of the oil industry, under its management, in Mexico. The message follows:

"Optimism is emanating from the government's oil control board, which asserts that there are brilliant prospects for outstanding success of the administration's undertaking, this enthusiasm being based upon numerous orders from abroad for oil and its products, the most important of which are from unspecified European countries and India for 117,000 metric tons of asphalt.

"The board is arranging to retail gasoline in lots of over 1,000 liters at 1.6 centavos the liter, four centavos below the current price.

"The board says that it has 1,700,000 pesos in the Bank of Mexico with which to meet its current obligations.

"The government's recently organized oil export company is to devote 20 per cent of its profits to the national fund that is being raised to indemnify the expropriated companies.

"Free imports of American gasoline to service Lower California and other isolated regions until the government can obtain tankers for sea deliveries are being considered, the board reveals.

"Semi-official information from Tampico is that Mexican Eagle Oil Company's refinery has 100,000 barrels of quality oil for domestic delivery and that the oil workers are doing good business fueling the national railways and steamers of such lines as the Ward and Hamburg-American, and, that in one week the Eagle's paraffine plant produced 37 metric tons."

Mexico's President Lazaro Cardenas (center, with hand raised) acknowledges the cheers of Mexican citizens who staged a parade and demonstration following Cardenas' announcement expropriating the $400,000,000 foreign controlled oil industry. While some, principally the oil field workers who feared a slash in wages by the new owners, disliked the decree's implications, the majority of the paraders rejoiced. Mexico's problem now is to find a customer for its oil.

Denies Making Deal

Francis W. Rickett, British financier who was reported April Fool's day to have flown from Mexico City to the United States with a skeleton contract for 25,000,000 barrels of Mexican oil in his pocket, April 3 gave out a denial of that report in New York, stating:

"In view of the conflicting reports in the press regarding my activities in Mexico, I wish to make it clear that no agreement has been entered into between the Mexican government and myself and my associate, B. E. Smith. Conversations and exchanges of views between ourselves and high officials of the Mexican government have taken place, and I am hopeful of a satisfactory outcome. These conversations will be continued in Mexico City in the course of the week and they will have no bearing on the matter of expropriations."

Smith is a New York broker. Rickett is remembered as the man who promoted the oil concession in Ethiopia prior to the Italian conquest.

Delivery Still a Problem

Even if the deal should go through, it is pointed out that 25,000,000 barrels, the rumored amount involved, is more than Mexico exported in 1937 with the help of tanker fleets belonging to the expropriated oil companies, so the di-

lemma of getting the oil out of Mexico continues to exist. The last posted quotation on Mexican crude was 95 cents per barrel F.O.B. Tampico, net, with the buyer paying the taxes. In December this was considered just about the highest price Mexican exporters could demand for the oil and compete in world markets. Hence, the opinion has been expressed in Mexico City that the government will have to let the oil go at a price considerably under 95 cents per barrel to make the proposition attractive to potential buyers. This is because of the expense of the long haul to countries recognized as potential customers for Mexican crude.

April Fool's day a new angle developed in the political phase of the situation. An announcement came from Washington, D. C., to the effect that the United States government was bent on scaling down drastically the claims of American oil companies for properties seized in Mexico. This, coupled with a previous expression of belief on the part of Cordell Hull, secretary of state, that Mexico had the constitutional right to expropriate if it paid the bill promptly and fairly, caused President Cardenas of Mexico to declare that the Roosevelt administration had won the esteem of the Mexican people.

And in speaking of the actions of the state departments of the United States and of Mexico, scouts of the United States war, navy and interior departments, somewhat to the chagrin of both state departments, it is said, are rumored to have told Washington that Japan, Germany and Italy have guaranteed to supply Cardenas with funds for a large down payment and future installments on the cost of expropriating the $400,000,000 foreign controlled oil business in Mexico. In return these countries ask, it is said, preference in the purchase of oil, a wartime essential. The smartest agents of the bureau of intelligence are making a feverish check of this angle, a Washington columnist says.

It has been repeatedly observed that neither the United States nor England, more heavily involved financially in the oil expropriation than the United States, looks with too much pleasure upon the possibility of the three other nations mentioned getting too much of a foothold in the Americas. If the Mediterranean were bottled up from England, she would have to depend in time of war on oil from the Americas (Venezuela and Trinidad mainly) for her military needs. And while the U.S.A. has enough oil for her own needs, she has vast investments in the Americas that would not be enhanced by growth of the power of Germany, Italy and Japan in the Americas.

What Price Industry

Naturally, there will be a difference of opinion as to what constitutes fair payment for the properties. The figure of $400,000,000 generally mentioned may be somewhere near the oil companies' conception of the industry's worth. On the other hand, Manuel Manterola set the value of the real properties of the oil companies at only 200,000,000 pesos (about $44,444,444 U. S.) in an article in the Economic Review of the National Union of Economists, it is said.

If efforts of the oil companies to relombia 3,285,931 barrels during that period. trieve their lost properties fail, the government must pay for those properties by April 17 if treaties signed during the administration of Alvaro Obregon (1920--24) are lived up to. These gave Mexico only 30 days to pay for expropriated properties. It is by some considered, however, that if the expropriation act stands the test of Mexico's courts, considerably more than 30 days from March 18 would be necessary to wind up details of just how much should be paid the companies.

Japanese refiners advance into China

Because of the lopsided military demand for special oil and gasoline grades there has developed an over supply of commercial distilling fractions, which Japanese refiners are now anxious to dump on the North China market. Two of them, Hayama and Maruzen, have already drawn up plans to build storage facilities in the region. It is further reported that negotiations are under way between Japanese interests and the Chinese-owned Tahua Petroleum Company aiming at merger or joint management.

Foreign oil firms in North China are watching these developments not without concern, especially as the Japanese are likely to press for "abolition of the discriminating tariffs." It is also feared that on the precedent set by Manchukuo the new "provisional government" of North China may monopolize the refining and marketing of petroleum products, so that the business of the foreign oil concerns would be limited to the selling of crude oil at a price fixed by the monopoly administration. In view of the huge area to be covered, marketing operations are an important factor in China's oil business, and the investment of foreign firms in transportation facilities is considerable.

Control of North China is unlikely to place Japan among the "halves" in regard to crude oil, according to the "Toyo Keizai Shimpo" (Oriental Economist), and even liquefaction of coal is viewed by the paper with a great deal of pessimism. Although there are huge coal deposits, treatment of the material by any of the known processes is beset with great difficulties owing to the peculiar composition of the coal.

International's production in Peru down in February

International Petroleum Company, Ltd., Toronto, Ontario, reports production from its Peru and Colombia holdings in South America to have declined during February, with output totaling 2,489,755 barrels, a daily average of 88,919 barrels. This compares with production of 2,868,336 barrels, or 92,527 barrels daily, for January, and with 2,770,317 barrels, or 98,939 barrels daily, for the corresponding month a year ago. Of the past month's total, Peru wells produced 1,009,851 barrels, while Colombia wells yielded 1,479,904 barrels.

For the first two months of the current year, the company's output totalled 5,358,091 barrels, an average of 90,815 barrels daily. Of this amount, Peru wells produced 2,129,615 barrels and Colombia wells gave 3,288,476 barrels. For the same period a year ago, production was 5,702,405 barrels, an average of 96,650 barrels a day. Peru wells gave 2,416,474 barrels and Co-

Crude oil production in Peru during 1937 amounted to 17,459,112 barrels, compared with 17,593,149 barrels produced in 1936, International Petroleum Company, Limited, being responsible for most of the decline. This organization, which produced 15,126,490 barrels in 1936, recovered only 14,722,753 barrels in 1937. Compania Petrolera Lobitos, however, showed an increase, accounting for 2,697,048 barrels of the 1937 total as against 2,417,557 barrels of the 1936 total for Peru. Production of Piaggio & Sons from Zorritos field dropped from 49,102 barrels in 1936 to 39,311 barrels in 1937. This company has, on the other hand, shown a tendency to increase its production lately.

The following table gives Peru's production by months for the two years:

Crude Oil Production in Peru
(Figures in Barrels)

	1936	1937
January	1,397,234	1,469,460
February	1,311,518	1,339,236
March	1,371,543	1,484,493
April	1,424,570	1,432,874
May	1,521,489	1,456,329
June	1,472,995	1,432,398
July	1,545,843	1,488,965
August	1,547,696	1,494,466
September	1,497,983	1,453,712
October	1,526,599	1,492,971
November	1,463,997	1,432,508
December	1,511,441	1,481,701
Totals	17,593,149	17,459,112

Over seven billion paid in taxes on gasoline

February 25 is a "red letter day" to the nearly 30,000,000 motor vehicle operators in the United States. It signalizes, according to information made public by the American Petroleum Industries Committee, the 19th "birthday" of the gasoline tax in the United States, a tax which has cost motorists more than $7,000,000,000 since 1919, and currently costs them nearly $1,000,000,000 a year.

The first gasoline tax, levied by Oregon in 1919 to finance highways, cost motorist taxpayers about $1,000,000 the first year, the tax rate being only one cent a gallon. By 1929, however, all the states were imposing gasoline taxes. By 1932 the federal government had imposed a duplicating tax on gasoline, and state gasoline tax rates were several times the original levy.

It is estimated that the total cost of state gasoline taxes to date has been $6,168,901,000 and that motorists have paid an additional $975,683,000 in federal gasoline taxes, making a total of $7,144,584,000. While the revenue has been collected to finance state highways, a proportion has been diverted to purposes unrelated to roads. It is estimated that in 1937 nearly 20 percent was spent for non-highway purposes.

California leads all the states in total gasoline taxes paid, $527,180,000 since 1923. Pennsylvania is second with $487,379,000 paid since 1921, and New York is third with $473,172,000 paid since 1929. Other large taxpayers include Ohio, $469,762,000; Texas, $385,145,000; Illinois, $321,326,000; and Michigan, $305,567,000.

California stands first also in state gasoline taxes paid, the total being $446,064,000. Pennsylvania is second with $421,623,000, and Ohio is third with $412,661,000. New York stands fourth with a total of $382,987,000 and Texas is fifth with $332,982,000.

Motorists of New York state are the

largest contributors to the duplicating federal gasoline tax, having paid $90,185,000 since 1932. California, with a total of $81,116,000, stands second in the federal field. Pennsylvania is third with $65,756,000, Illinois fourth with $60,011,000, and Ohio fifth with $57,101,000.

Actually, the motorists of New York state have been the heaviest contributors to gasoline tax income, the state being one of the last to impose a tax upon gasoline. Thus New York motorists have paid $382,987,000 in state gasoline taxes in eight years as against $446,064,000 paid in California in 14 years.

New York leads also in the diversion of gasoline tax and other automotive tax revenue to non-highway purposes, the estimated total of such diversions through 1937 exceeding $300,000,000. This is more than four times as much as has been diverted by any other state, and is equivalent approximately to one-third of total diversions by all states. The bulk of the money diverted in New York and other states has gone for "general purposes."

Natural gasoline output off; stocks up in February

Washington.—Production of natural gasoline in February declined materially from the level of the preceding month but remained well above that of February, 1937, it was disclosed April 8th in the monthly report of the Bureau of Mines.

Total production for the month was 163,338,000 gallons compared with 182,112,000 gallons in January, the report stated.

The daily average output of 5,833,000 gallons was 42,000 gallons under the January average of 5,875,000 gallons but 486,000 gallons above the February, 1937, average of 5,397,000 gallons, it was reported.

The greatest decreases registered during the month were in the Oklahoma City, Panhandle and Kettleman Hills districts.

Although production declined, stocks increased at refineries but declined at plants and terminals. Refinery stocks at the close of the month were 123,942,000 gallons against 107,478,000 gallons January 31, and plant and terminal stocks were 86,772,000 gallons against 100,464,000 gallons.

La Blanca hearing on April 18

The Texas Railroad Commission has set a hearing on the La Blanca field, Hidalgo County, for April 18 at Austin. Special operating rules for the field will be considered.

Seek 20-acre spacing at Kubela

Twenty-acre spacing for wells in the Kubela field, Wharton County, was urged at a hearing before the Texas Railroad Commission last Friday. There are now four wells producing in the field and operators estimated that it will include about 300 productive acres.

OKLAHOMA FIELDS

Third Ramsey pool failure finds Wilcox dry and salty.

★ ★ ★

Cement well goes on rampage with heavy flow of gas.

Tulsa.—Ramsey pool, Payne County, recorded its third dry hole last week, when E. H. Moore's Boyd 1, NEc 24-18n-1e, due south of the community block in the pool, drilled to 5079 feet in second Wilcox sand, and found it dry, white and salty. It was checking 202 feet lower than the discovery well of the pool, having topped the second sand at 5070 feet.

In the eastern part of the county, R. L. Kemp et al's Rafferty 1, SEc NE 6-18n-5e, which has been showing as a pool opener for several weeks, continued fishing for cable tools blown up the hole two weeks ago. It is thought the well is in first Wilcox sand from 3665 to 3666 feet. Gas continued breaking through cavings in the hole about once every 12 hours, blowing mud, oil and cavings up the rig.

Another development was finding the north end of the Traugh pool extension in Seminole County. The edge well was Simpson and Roodhouse' Jackson 1, SWc NE 15-6n-6e, which drilled to 4000 feet to find a hole full of water. It is one-half mile north of production.

In the Dora pool of southern Seminole County, three good producers were brought in. First was Troop and Hall's Snyder 2, NEc NW 4-6n-6e, which made 1825 barrels of oil in 24 hours, producing from Boggy sand at 2768 to 2862 feet. J. F. Smith's Harryman 3-A, SE SW SW 33-7n-6e, made 900 barrels of oil in 24 hours from 2891 feet in Boggy sand, and Smith's Harryman 2-B, SW SE SW 33-7n-6e, made 610 barrels in 24 hours from Boggy sand at 2794 to 2897 feet.

Tests continued at Phillips Petroleum Company's Beeker 1, NE NW SW 8-5n-10e, southwest of Calvin in Hughes County, at a plug-back depth of 5660 feet. It made 206 barrels of oil in 16½ hours on the last test.

Wild Cement Well

At the east end of the Cement field of Caddo County, Magnolia Petroleum Company's Hedlund 8, NE NW NE 11-5n-9w, went wild early last week, blowing an estimated 100,000,000 cubic feet of gas daily. Approximately 8,260,000 cubic feet of gas was encountered at 5404 feet two weeks ago, but the well was being drilled ahead in search of oil when the latest gas production was encountered from 5754 to 5757 feet in a sand. Tools were coming out of the hole when the flow was had. Operations were suspended in many parts of the

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OKLAHOMA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CADDO COUNTY—		
Magnolia, Hedlund 8 (Twin) 8 cne nw ne 11-5n-9w	¶8.26	5404
CARTER COUNTY—		
Carl Carter, McLish 1, nw nw se sw ne 19-2s-3w	*	1340
HUGHES COUNTY—		
Amerada-Stanolind, Martin 1, nw ne ne 6-9n-9e	*	3486
JOHNSTON COUNTY—		
Patton et al, McCrummens, sw sw ne 16-1s-6e	*	1382
LINCOLN COUNTY—		
Stano. & Amerada, Stroder 1, nw nw ne 8-13n-3e	*	5277
MUSKOGEE COUNTY—		
Pure Oil, Perryman 12, cwl ne sw 14-13n-12e (owdd)	*	2166
Flecks Drlg. Adams 1-A, se sw sw 12-14n-14e	5	1066
W. B. Pine, Bassett 10, c se sw 19-14n-14e	5	1353
Prince & Brown, Warner 20, se ne nw sw ne 21-14n-14e	5	1117
OKFUSKEE COUNTY—		
W. B. Wells et al, Fields 2, cwl sw nw 13-10n-11e	15	1660
Arrow S. Barry, H. D. Sands 2, cn½ s½ nw sw nw 28-10n-11e	¶3	2583
OKLAHOMA COUNTY—		
Clark & Co., Ownbey 1, nw se sw 15-12n-3w	840	6535
Fortson & Polk, Irvington 1, sw nw sw 15-12s-3w	35	6450
Olson Oil et al, Thornton 1, n½ s½ sw ne sw 16-12n-3w	1239	6512
Stahl Pet. Crawford 1, sw nw ne sw 15-12n-3w	1023	6454
OSAGE COUNTY—		
Lewis Production, Osage 7, nw ne nw sw 27-24n-7e	130	2679
N. Avant Unit, Osage 2, se nw se nw se 31-24n-12e	10	1750
I. T. I. O., Osage 3, ne sw nw ne 27-25n-11e	¶2.7	1910

*Failures; †Junked; ¶Million cu. ft. gas.

field and traffic on highways stopped until the well could be brought under control.

Meanwhile, reports from Grady County indicate Oklahoma will not get a test to the 15,000-foot level. Scheduled to go to that depth, Gulf Oil Corporation's Thomas 1, SW NW NW 14-4n-5w, south of Bradley, stopped drilling at 11,425 feet two weeks ago when drill pipe was frozen at two different levels, and may abandon the hole there.

Coline Oil Company's Johnson 1, SW SE NE 1-2n-8w, northwest of Marlow in Stephens County, ran the swab to 9005 feet and made one 4-barrel flow. It is at a plug-back depth of 9086 feet.

At the southeast end of the Hewitt field of Carter County, The Texas Company continued making hole at Cathay 1, SEc NE 6-5s-1w, an old well drilled deeper. A core from 5458 to 5477 feet had a 15-foot recovery of lime which yielded a small show of oil. It was coring ahead.

Other Work Slow

Other activity in the southern part of the state was rather slow. Carter Oil Company's Carter-Harley 1, CNW NW 19-2s-3w, had 1645 feet of drill pipe in the hole and was fishing. Total depth was 8250 feet. Gulf Oil Corporation and Carter's Lester 1, CNW NW 35-2s-3w, was drilling below 4480 feet in Woodford shale; Gulf's McClure 2, CSE NE 28-2s-3w, was drilling at 4700 feet; Gulf's Johnson 1-A, CSE NW 27-2s-3w, was drilling below 3640 feet and Gulf's Garrett 8, CNW SW 27-2s-3w, was below 4085 feet in shale.

Farthest southeast test in the field, Carter Oil Company's Feagin 1, CNW SW 36-2s-3w, was drilling below 4365 feet.

Company, Well and Location	Init. Prod. Bbls.	Depth
PONTOTOC COUNTY—		
Continental Oil, Monroe 3, ne sw nw 12-1n-7e	1558	4710
Blackstock, D. Hardin 2-A, ne se nw 30-2n-7e (owpb)	60	3750
J. E. Crosbie, Inc., D. Hardin 1-B, sw sw ne 30-2n-7e (owpb)	8	3631
Texas & Pacific, Hatcher 4, se ne nw 30-5n-5e (owdd)	185	2502
POTTAWATOMIE COUNTY—		
Magnolia, M. A. Jordan 1, se se sw 12-7n-4e	170	3115
Ross Oil Co., Caudle 1-A (twin) nw sw sw 13-7n-4e	110	3131
Woodson Oil, Singleterry 1-A, se se sw 14-7n-4e	*	3235
Magnolia Pet., Robbins 5, sw sw se 15-7n-4e (owpb)	87	3829
Meyers, Owens 1-A, ne se se 21-7n-4e	*	3515
Magnolia Pet., Billington 2, nw nw ne 22-7n-4e	115	3749
Magnolia Pet., Billington 3, ne ne nw 2w-7n-4e (owpb)	175	3800
Vivian Oil Co., LeClair 1, nw nw ne 23-7n-4e	155	3435
Tilico Oil, Brister 3, sw nw ne 26-7n-4e (owpb)	27	4135
Phillips, Moh-the-was 2, ne ne se 30-7n-5e	179	4210
Alma Oil, Smith 1, se se ne 32-7n-5e	930	4059
Southwest Pet., Gunter 3, ne ne sw 32-11n-4e	40	4460
SEMINOLE COUNTY—		
Texas Co., Lewis 1, sw se nw 13-5n-7e (owpb)	10	4286
W. B. Pine, G. Tiger 1, sw sw se 15-6n-6e	4800	3726
Gulf Oil Co., Denmark 3, ne sw se 11-7n-6e (owpb)	20	4242
J. F. Smith et al, Harryman "B" 1, nw se sw 33-7n-6e	545	2890

*Failures; †Junked; ¶Million cu. ft. gas.

KANSAS FIELDS

Stanolind well extends Zenith pool half mile north.

* * *

Siliceous lime core indicates Silica extension.

Wichita.—The Zenith pool of Stafford County, extended a half mile north last week, looked as though tests on the west and southwest edges of the pool were defining production trends in those areas. A northeast extension of Silica pool, Rice County, was reported.

The extension well for Zenith pool was Stanolind Oil & Gas Company's Martin 1, SEc NW 14-24s-11w, which was showing for a commercial producer from Misener sand at 3802 feet. The hole filled 2600 feet with oil in 2 hours, and on preliminary tests made 100 barrels of oil the first hour, 71 the second and 73 the third.

May Define West Edge

To the west, Stanolind's McComb 1, NEc 27-24s-11w, may have found the west edge of production, showing only a little oil and some water at 3868 feet. It is one-half mile west of production.

Southwest of the pool, Pryor & Lockhart's DeSelms 1, NEc 3-25s-11w, three-quarter miles from production, drilled to 4100 feet in Siliceous lime for no show, apparently limiting production on that side of the pool. It was shut down and will probably be abandoned. It had Viola lime from 3895 to 3900 feet, with top of the Siliceous lime at 4045 feet.

South of the pool a half mile, Sunray Oil Company's McComb 1, SWc NW 24-24s-11w, recovered a core saturated with oil from Misener sand between 3795 and 3797 feet. It was scheduled to set pipe and test.

Northeast of Zenith a small showing of oil was reported in McCole et al's Mathews 1, SW NW NW 15-24s-10w, at 3425 and 3433 feet in Lansing lime. It was drilling below 3500 feet.

Three miles north of the pool, Knight & Cohen's McNickle 1, SEc NE 2-24s-11w, was rigging up rotary.

Silica Extended

Stanolind Oil & Gas Company's Gossman 1, SEc NW 28-19s-10w, extended the Silica pool of Rice County a half mile northeast last week, recovering a core saturated with oil from 3288 to 3290 feet in Siliceous lime. It was to be completed with standard tools and casing was being run to top of the lime at 3288 feet. The Silica pool is situated in both Rice and Barton Counties.

An east extension at Wellington pool, Sumner County, was not looking so good as Stanolind Oil & Gas Company and Amerada Petroleum Corporation's Frambers 1, SWc NW 34-31s-1w, after being acidized with 1000 gallons at 3717 feet, had only a small showing of oil.

Carter Oil Company's Nelson 1, CE½ NE SE 7-17s-3w, south of the discovery producer of the Lindsborg pool, McPherson County, drilled to 3372 feet in Viola lime where it showed a little oil and water. Acidized with 2000 gallons, it made 40 barrels of oil and 12 barrels of water in 12 hours. Reacidized with 3000 gallons, it made 36 barrels of oil and 5 barrels of water in 6 hours. Following another test, during which it made 62 barrels of oil and 21 barrels of water, it was reported another acid treatment would be made with 2000 gallons.

One mile south of the Chase pool, Rice County, Holland et al's Malone 1, NE SW NE 19-20s-9w, was showing for a commercial producer from Misener sand at 3378 feet, opening a new horizon to production for the area. The hole filled 2000 feet with oil from the sand, testing 48 gravity, among the highest in the state. Production at Chase is from Siliceous lime at an average depth of 3240 to 3280 feet.

Field Opener

Crown Petroleum Corporation's Schartz 1, 7-20s-11w, two miles west of the Ellinwood pool of Barton County, hailed as a pool opener two weeks ago, proved itself last week, filling 1400 feet with oil. When drilled to the total depth of 3349 feet in Siliceous lime it had a hole full of oil.

Mid-Plains Oil Corporation's Van Blarcom 1, CEL NW 10-21s-7w, was to deepen and take another potential. First potential, at 3377 feet in conglomerate, was 691 barrels of oil, made with temporary equipment. The well is one-half mile west of the Wherry pool of Rice County, and was rated an extension several days ago.

Continental Oil Company and Cities Service Oil Company continued swabbing at Morrel-Trexler 1, SW NE NE 15-9s-21w, southeast of Hill City in Graham County. Following the last swabbing test, during which it made 192 barrels of oil in 4 hours, the hole filled 1800 feet with oil in one hour.

National Refining Company's Bonham 1, SWc SE 28-25s-12w, Stafford County wildcat southeast of the St. John pool, which has been showing as

a pool opener for several weeks, continued testing at 4212 feet in Siliceous lime. On swab the well made 50 barrels of oil and 2 barrels of water in three hours after acidization with 1000 gallons. The swab was lost in the hole and tubing was being pulled.

Wildcat Showing

A core slightly stained with oil was recovered from below 3360 feet in Siliceous lime at Gear and Atlantic Refining Company's Sullivan 1, NE SE SW 29-17s-13w, south of the Hoisington pool, Barton County. It is six miles south of the Ainsworth pool.

Jones & Shelbourne's Kuhnle 1, SEc NW 4-15s-12w, which opened a new pool for Russell County two weeks ago, made 945 barrels of oil on potential at 3045 feet in Kansas City-Lansing lime.

Northwest of the Donovan pool, Russell County, Carter Oil Company's Foster 1, SEc NW 1-15s-16w, a wildcat, had salt water in the Wilcox sand at 3447 feet. It previously showed some oil. It made about two gallons of oil on bailer every two hours.

KANSAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BARBER COUNTY—		
Carter & Wentz' Lytle C-61 1, c ne nw 6-23s-14w	*	4980
Barbara Oil, Root "B" 2, ce¼ e½ ne 15-33s-13w	¶5	5045
Thompson "Z" 2, c nw 22-33s-13w	¶7	4660
BARTON COUNTY—		
Cities Ser. Oil, Stoskopf 1, ne ne nw 17-16s-13w	543	3406
Shell Pet., Hoffman "C" 1, nw ne se 1-16s-14w	1591	3326
Schneider "B" 2, nw ne nw 1-16s-14w	756	3294
Batt "B" 1, se se se 2-16s-14w	920	3314
Phillips Pet., Kraft 4, ne nw ne 10-17s-11w	125	3342
Stanolind O&G, Schartz 1, ne sw ne ne se 34-19s-11w	*	3347
BUTLER COUNTY—		
Phil Polhamus, Alberts 1-A, nw sw se se 21-25s-4e	10	2600
Isador Molk, Loomis 12, sw nw sw 15-27s-4e	40	2510
COWLEY COUNTY—		
E. B. Shawver, Shawver 4, se se ne 3-30s-4e	*	2880
ELLIS COUNTY—		
Cities Ser. Hall "B" 9, ne sw nw 26-11s-17w	2402	3425
Twin Drlg. Co. et al, Hall 1, nw sw ne 1-12s-17w	*	3621
ELLSWORTH COUNTY—		
Cities Service, McLLhagen 1, sw ne ne ne 29-17s-9w	1332	3246
Skelly Oil, Zink 4, sw se sw 32-17s-10w	60	2999
GREENWOOD COUNTY—		
Katz Oil, Christy 3, nw sw se 12-26s-9e	25	2144
McPHERSON COUNTY—		
Ohio Oil, Decker 15, ne nw se 20-21s-1w	606	3330
RICE COUNTY—		
Continental Oil, Bolton 2, ce¼ e½ nw 31-18s-7w	1994	3216
ROOKS COUNTY—		
Vickers Pet., Luhman 2, ne sw se 11-9s-10w	80	3313
RUSSELL COUNTY—		
Central Pet. et al, Rouback "Z" 4, 15-14s-15w	900	3270
SUMNER COUNTY—		
Stelbar, Rothrock 6, sw nw ne 4-32s-1w	584	3695

*Failures; †Junked; ¶Million cu. ft. gas.

S. J. Ryan (right), who got production on the southwest flank of Orange Field, and J. M. Campbell, whose try in that regard recently ended in an abandoned hole.

ILLINOIS DEVELOPMENTS

Olney seems doomed to get along without oil field

Olney, Illinois.—The city of Olney, Illinois, basin headquarters of many oil companies, is apparently doomed as far as an oil field of its own is concerned, despite Burkan Oil Company's good pumper on the Allen farm, Section 27-4n-10e, Olney Township, just north of the state's oil capitol, which had an initial of 300 barrels daily from the McClosky, bottomed at 3045 feet.

An eastern offset by the Bur-Kan Company on the same farm and Morrison's G. Conour 1 to the south and within the city limits were completed as dry holes several weeks ago. Last week Gulf Refining Company's L. Pasley 1, Section 27-4n-10e, Olney Township, proclaimed the area north of the Allen pumper dry, and Tuesday Kingwood Oil Company's H. J. Elliot 1, Section 28-4n-10e, Olney Township, to the west, took cores to 3063 feet and found only a foot of McClosky. The test is not considered capable of commercial production at its present depth, and is being reamed preparatory to deepening to the St. Louis lime formation.

[*Continued on page 82*]

NEW MEXICO

Market restrictions may reduce drilling to offsets

Hobbs, New Mexico. — Productive limits of the Vacuum field were expanded to the west by two flowing wells the past week. Amerada Petroleum Corporation's State 1-V-A, C SE SW 23-17s-34e, flowed 397 barrels of oil natural through ¾-inch tubing choke from broken pay drilled to 4740 feet. Magnolia Petroleum Company's State 1-J, C NE SE 22-17s-34e, 2/3-mile northwest of the above well, encountered tighter lime conditions and required two acid treatments to develop a flow of 8 barrels per hour through ½-inch choke, with hole bottomed at 4750 feet, or 706 feet sub sea. Hole filled 300 feet with oil natural, and a slight rise in the fluid level was reported after the first treatment with 4000 gallons.

Shrinkage in the market demand for Lea County crude, indicated by Shell Petroleum Corporation's action in curtailing its run effective April 10, to 20 percent of the March daily average, may adversely affect the drilling boom currently underway in the Vacuum field. The above concern is absorbing about 33,000 barrels daily, including 4800 barrels of controlled production, or about one-third of the county's output. The new drilling center will receive its first pipe line outlet April 15 through completion of Texas-New Mexico Pipe Line Company's 8-inch carrier. State allowable quota for all fields in the county may be reduced to the demand level, otherwise reduced

NEW MEXICO

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CHAVES COUNTY—		
Grastorf & Caudill, Smith 1, c ne ne 1-4s-29e	†	680
LEA COUNTY (Eunice)—		
Continental, Reed 3-B-23, c e½ se se 23-20s-36e	2000	3866
Reed 4-B-24, c e½ nw sw 24-20s-36e	1200	3863
Humble, Fopeano 4, c se se 26-20s-36e	960	3850
T. P. Coal & Oil Co., State 9-A, nw sw ne 7-22s-36e	250	3825
LEA COUNTY (Hardy)—		
Skelly, Hill 2, lot 2, 6-21s-37e	170	3780
LEA COUNTY (Langlie)—		
Anderson-Prichard, Jal 2, c nw ne 8-25s-37e	488	3479
LEA COUNTY (Mattix)—		
Texas Co., Fristoe 3, nw se ne 3-25s-37e	615	3480
LEA COUNTY (Vacuum)—		
Magnolia, State 1-K, c nw se 31-17s-35e	1075	4667
LEA COUNTY (Penrose)—		
Continental et al, Elliott 3-B-6, c se se 6-22s-37e	150	3778
Humble, Greenwood 2, c nw sw 9-22s-37e	250	3714
Texas Co., Falby 3, c ne sw 8-22s-37e	219	3730
LEA COUNTY (Wildcat)—		
Gulf, La Munyon 1, c ne ne 28-23s-37e	*	3666
Mascho et al, Cloyd-Conoco 1, c se se 20-22s-33e	†	3516

*Failures; †Junked; ¶Million cu. ft. gas.

takings are likely to be instituted by the other four buyers, who have announced that current runs exceed their respective requirements. The per-well allowable was raised from 61 to 62 barrels daily on the April 1-16 schedule. A substantial reduction would adversely affect the new drilling in the Vacuum field and older areas in the county until the market situation improves, however, offset requirements will be taken care of.

Vacuum field accounted for 4 new tests the past week, including two from Magnolia Petroleum Company, which has made location for State-Bridges 6, C SW NW 23-17s-34e. This company's State 1-K, C NW SE 31-17s-35e, southeast outpost, flowed 957 barrels intitial, with the flow restricted to 40/64-inch choke the last 13 hours, from lime at 4667 feet. Rig was skidded one location east for State 2-K. The Texas Company is rigging up to drill State 2-O, C SE SE 25-17s-34e, and Phillips Petroleum Company has started operations on State Santa Fe 3, C SW NW 5-18s-35e.

East edge of the Monument field gained two new projects. Amerada Petroleum Corporation's State 2-Q, C W½ NE SE 16-20s-37e, and Continental Oil Company et al's Britt, 1-B-15, C W½ NW NW 15-20s-37e, are required offsets. The latter completed Reed 3-B-23, C E½ SE SE 23-20s-36e, flowing 55 barrels hourly through ¾-inch coke after using 2000 gallons of acid at 3866 feet, and rig was moved to drill Reed 4-B-23, C E½ NW NE 23-20-36e. They are on opposite side of the dividing line used for proration purposes in the Monument Eunice area.

In the Mattix sandy-lime area, Continental Oil Company at el's Jack 2-A-20, C SE SE 20-24s-37e, has started operations, and location has been made for Stanolind Oil & Gas Company's Myer 5-B, NE SW 9-24s-37e.

Firm's retirement means dismantling refineries

Kilgore, Texas.—Retirement of the General American Oil Company, Dallas, as a refining unit in the East Texas field will result in the dismantling and salvage of its plants at Gladewater, Overton, and Arp, with an aggregate throughput capacity of 16,500 barrels daily. The first plant was built early in 1933 at Gladewater by Gilliland Refining Company, which was later merged with other producing and refining concerns to form the nucleus of General American Oil Company. John W. Gillaland and A. H. Meadows are president and vice-president, respectively, of the latter. Controlled production held by the company in the East Texas field has been diverted to the Texas Coast for several months.

In the event the General American Oil Company re-enters the refining branch of the industry, a plant will be erected on the Texas Coast, according to an official of the company.

GEORGE S. DAVISON, former president of Gulf Refining Company, was honored at a testimonial dinner by the Pittsburgh Chapter of the American Society of Civil Engineers last week. He entered the employ of the Gulf in 1904, eventually becoming its president. He is a past president of the American Society of Civil Engineers.

WEST TEXAS FIELDS

New pool between Church & Fields and Gulf-Waddell.

* * *

Edge well at Jordan gauges 875 barrels in 5½ hours.

* * *

Watch likely south and southwest Wasson extensions.

Midland, Texas.—Development of a new oil field in northeastern Crane County on a direct trend between the Church & Fields and Gulf-Waddell areas, discovered in 1926 and 1927, respectively, is forecast by the preliminary showing of a wildcat on University of Texas fee land. Magnolia Petroleum Company's University 1, NWc Section 16, Block 30, situated 3½ miles northwest of the Church & Fields area and 6½ miles from depleted oil wells in the Gulf-Waddell field, filled 250 feet with oil in drilling broken lime to 3258 feet, and has cemented 7-inch at 3221 feet for a production test. Oil and gas showings were logged at 3197-3233 feet, with an increase at 3244-58 feet. Top of anhydrite was logged at 1205 feet, and first Yates sand at 2225 feet, with an elevation of 2634 feet.

Explorations along established production trends in the Permian lime belt have heretofore yielded a high percentage of the discoveries. Untested acreage between the above two Crane County fields has been rated as favorable oil prospecting territory for a number of years, and lease owners have held on to their protection acreage. Standard Oil Company of California staked a tentative location last year on University land, NWc Section 5, Block 30, but deferred drilling.

Jordan Edge Well Prolific

Another prolific natural producer was scored on the southeast edge of the Jordan area, Crane County, when Atlantic Refining Company's University 2-A, NW SW SW Section 12, Block 35, gauged 875 barrels oil in 5¾ hours through tubing from lime at 3520-35 feet. This well previously flowed 754 barrels oil in 2½ hours. Snowden & McSweeney Company's University 4, a west offset, was drilling at 1500 feet. Gulf Oil Corporation's Henderson 12, NE NE SE PSL Section 4, Block B-23, on a direct line between the Jordan and Gulf-Waddell fields, was drilling at 3265 feet, with oil and gas showings in upper sandy-lime pay at 3233-37 and 3250 feet. Eventual linking of the Judkins-Penwell field, Ector County, and the Gulf-McElroy field, Crane-Upton County, except for a minor gap, has been generally conceded in geological circles.

Action taken by Shell Petroleum Corporation in restricting its crude purchases effective April 10 in the New Mexico portion of the Permian basin has been accompanied by slackened demand for crude and new well connections in the Texas portion of the basin. One of the largest purchasers in latter district has turned down offers the past week for new well connections, indicating the possible forerunner of a drastic change in crude buying policy. Two other ranking crude buyers have loaded lines, while all purchasers report current takings as being in excess of demand.

Gets Sulphur Water

Choate & Hogan's University-Gulf 1, prospective shallow pool opener in northwestern Crockett County and on a southeast strike from the McCamey district, encountered flowing sulphur water in lime at 1625-27 feet, with an elevation of 2371 feet. Hole has been plugged back to 1575 feet for a nitro shot and acid in a zone that averaged 2/3 barrel of oil per hour on bailing test. W. L. Bradley et al's A. C. Hoover 1, SW SW NW GC&SF Section 1, Block 1, offsetting production in the Hoover lime pool, developed 2,000,000 feet of gas at 1364 feet, and 15 barrels of 22 gravity oil daily from stray pay at 1420-25 feet. Drilling is in progress at 1800 feet, with an elevation of 2249 feet. Regular production is found in this area at the 2000-foot level. Considerable new activity has been launched in recent weeks within and near the pool, which registered its first oil production in January, 1933. The discovery was not rated as a commercial producer, thus accounting for the delayed development.

Shows for Small Well

Cardinal Oil Company's White-Baker 1-a-36, SE SE SW T. C. Section 36, Block Z, Pecos County semi-wildcat, is showing for a 25-30-barrel producer after nitro shot in sandy-lime at 1639 feet. Hole was plugged back from 1654 feet. Previous operations in the general area have resulted in small oil wells but the depletion rate has been rapid. Location is near an Ordovician lime failure drilled by Humble Oil & Refin-

ing Company. Drilling operations with rotary were resumed late last week at 5444 feet by Magnolia Petroleum Company and Tex-Mex Petroleum Corporation's McKee 1-a, northern Pecos County Ordovician prospect. Hole is bottomed in Simpson series, and trouble with cavings developed at the latter depth. When 7-inch pipe was pulled to change to rotary, the well flowed 12 small heads of oil from pay passed up at 5271-80 feet.

Prospective west and southwest extensions for the Yoakum County portion of the Wasson field remained in the limelight the past week. Shell Petroleum Corporation's Dora Roberts 1, NW SE SE Section 793, 1¼ miles northwest of the most westerly producer, was drilling in solid lime at 4540 feet. Top of brown lime was called at 3930 feet, with an elevation of 3694 feet. It is checking higher on all markers than the nearest producer, indicating an abrupt change in structural conditions. This company's Dowden 1, located 2/3 mile southwest of production, was drilling at 4510 feet, having logged top of Yates at 2910 feet, with an elevation of 3599 feet. Helmerich & Payne, Inc.-Continental Oil Company's Sadie O'Dowd-L. Dowell 1, C NE NE Section 896, also a southwest outpost for the area, was drilling at 3950 feet. It is on an Ohio Oil Company farmout. Top of anhydrite was called at 2100 feet, with an elevation of 3628 feet. Drilling time is being steadily speeded up in the area through the use of heavy duty rotaries. The latter test was spudded March 23.

Walter J. Donnelly et al's University-Humble 1, C NW SE Section 16, Block 14, Andrews County wildcat, developed a gas show in Yates sand, topped at 2920 feet, with an elevation of 3203 feet, and was drilling at 3350 feet. Majors are supporting this project and control the bulk of the acreage in the general area.

WEST TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ANDREWS COUNTY (Fuhrman)—		
Gulf, Ford 1	229	4470
CRANE COUNTY (McCamey)—		
Enniscrane Prod. Corp., Hughes 4-C	954	2090
Fields et al, A. Gibbs-Conoco 14	792	2300
ECTOR COUNTY (Foster)—		
Barnsdall, Foster 11, sec 18	661	4287
Superior, Cowden 4	1026	4260
ECTOR COUNTY (Goldsmith)—		
Amerada, Cummins 7	300	4280
Gulf, Goldsmith 83	1016	4205
ECTOR COUNTY (Harper)—		
Barnsdall, Cowden 9, sec 26	2008	4150
Continental T. P. Land Trust 3-27	2311	4175
ECTOR COUNTY (Jordan)—		
Fogelson et al, University 8-B	576	3641
HOWARD COUNTY—		
Moore Bros. Corp., T. P. Land Trust 4-A	529	2830
Lockhart et al's A. R. Huesinger 1	936	2925
F. W. Merrick, Roberts 3	485	2978
JONES COUNTY—		
Bridwell Oil Co., Carter 1	*	2250
Burleson et al, Lotspeich 1	*	2315
Danciger, Roberts 1	272	1946
Fain-McGaha, Williams 3	310	1947
Fain-McGaha & Sinclair Prairie, F. Olson 2	2112	3233
Humble, Hollums 3	2400	3252
Owens-Snebold Oil Corp., Rhodes 1	*	4007
Roeser & Pendleton, Badgett 1	*	2400
Ungren & Frazier, Dorsey 17-C	113	2362
Dorsey 7-D	*	2337
Worsham et al, Commons 1	†	1525
PECOS COUNTY (Taylor-Link)—		
Fred Devore & Minnich, University-Conoco 1	*	1722
PECOS COUNTY (Torborg)—		
Ohio, Yates 1-G-T	126	399
TAYLOR COUNTY—		
Bramham et al, Armstrong 1	*	2122
TERRELL COUNTY—		
Basurto et al (was Sudderth-Sides-Bates), J. H. Phelps 1	†	5600
UPTON COUNTY (Gulf-McElroy)—		
Gulf, McElroy 171	178	2790
UPTON COUNTY (McCamey)—		
Benoil Co.-Frank Bennett, Shirk-Texon 5	477	2452
Brown-Hancock-Hines Oil Corp., Baker-Conoco 3-D	994	2215
Humble, Ricker 21-A	102	2154
Pittman et al, Elder 1, sec 14	*	3065
Texas Co., King 38	21	2809
King 39	44	2528
WARD COUNTY—		
Cullum & Alexander, Buchanan-McDonald 2	278	2343
Gulf, Estes 84	1127	2940
Hadlock & McFarlane, Hayes-Monroe 1	*	1000
Sayre Oil Co., Bertner 1	212	1971
Sinclair Prairie, H. Archenhold 11	410	3030
WINKLER COUNTY (Kermit)—		
Magnolia, Walton 144	1510	2930
Sinclair Prairie, Cummins 2-D	58	3037
T. P. Coal & Oil Co., Thornberry 3	1084	3073
YOAKUM COUNTY (Wasson)—		
Humble, Lynn 1	416	5095
Texas Co., Willard 3	687	5085

*Failures; †Junked; ¶Million cu. ft. gas.

MARCUS A. HANNAH and D. W. Gravell, both with Gulf Oil Corporation, Houston, were the principal speakers at the Houston Geological Society's regular weekly meeting at the Lamar Hotel, April 7. Their subject was "Subsurface Zones of Correlation in Mississippi, Alabama and Florida."

WEST CENTRAL TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BROWN COUNTY—		
Curry et al, Arledge 1	*	1412
Ownby Drl. Co., Steele 1	30	1860
Selvidge et al, Perry 1	*	1270
Windom et al, Moore 1	28	2470
CALLAHAN COUNTY—		
Bartrung et al, George 1	*	820
Fair et al, Finley 1	*	658
Hal Hughes Pet. Co., Poindexter 1	1500	4389
Rose et al, Hart 1	*	805
COLEMAN COUNTY—		
Brock et al, Waters 1	*	1070
Coleman O&G Co., Pope 10	¶1½	2341
Ragsdale et al, Weaver 1	*	1440
Walker, Tr., Vaughn 1	¶2½	1136
EASTLAND COUNTY—		
Hickok Prod. & Dev. Co., Donovan 1	*	4376
Johnson et al, Jackson 1	*	665
Lone Star Gas Co., Thomas 1	700	4157
Warren et al, Ramsey 1	*	602
McCULLOCH COUNTY—		
Westbrook et al, Johnson 1	10	1828
PALO PINTO COUNTY—		
Cole et al, Harris 1	*	950
Gob'e-Moore Drl. Co., Costello 2-A	*	1480
Costello 1-B	20	1438
Gordon et al, Ringo 1-A	*	3849
Hobbs et al, Holt 1	*	200
Luke et al, Lahem 1	*	1045
SHACKELFORD COUNTY—		
Bailey, Tr., Andrews 3	6	533
Diller 4	7	527
Charter O&G Co., Swenson 1	10	1582
Hamer et al, Andrews 1	*	940
Healey & Waters, Newell 1, sec 5	*	1892
Heltzel et al, Matthews 1	*	688
Hoffman-Page Co., Morris-Buie 26	15	1600
Kittery Oil Co., Erharat 7	4	820
F. G. Lippett et al, Cook 1	*	1325
Roeser & Pendleton, Dawson 1, sec 203	115	1625
Ungren & Frazier, Stuart 1	*	1958
Whitten & Byars, Diller 1	*	545
Widener et al, Guitar 1	*	1948
Wittmer et al, Lones 1-A	¶1	670

*Failures; †Junked; ¶Million cu. ft. gas.

All carbon black held taxable by Texas court

The Texas Supreme Court has held that the state tax on carbon black is assessable, regardless of the method used in producing the black. This decision was handed down last week in the case of Peerless Carbon Black Company vs. State Comptroller George H. Sheppard.

The Peerless produced black by a process other than that specified in the statute, and for that reason contended that it was not liable for the tax.

Texas deficit drops

The total Texas deficit in the general revenue fund dropped to $11,793,491 on April 5. On that date the State called in more than $3,000,000 in warrants, the largest call ever made.

On the same day, State Comptroller George H. Sheppard reported on tax collections for the first six months of the current fiscal year, which began on September 1, 1937. His statement showed that the oil industry was paying 40.34 percent more than it did in the same period of the 1937 fiscal year.

The total collections from oil were $8,474,193, which is $2,435,781 higher than for the same period a year ago.

The report showed that oil production was up 11.32 percent, and that most of the increase resulted from the higher tax and a higher price for crude. The tax collected was paid on the production of 244,834,888 barrels of oil.

Gray County wildcat sprays oil from broken lime

Pampa, Texas.—A southeastern Gray County semi-wildcat drilled by Lone Star Gas Company on the J. A. Fowler tract, near C NE H. & G. N. Section 118, Block 23, developed spray of oil at 2500 feet while carrying 20,000,000 feet of gas from broken lime at 2475-85 feet and 2489-2500 feet. Seven-inch pipe will be set for a production test. Location is on the south flank of the buried granite ridge.

Stokley and Savage's C. E. Beigel 1, SW SW NW H. & G. N. Section 63, Block 23, situated 5 miles south by east of the above prospect, recently tested 1,000,000 feet of gas in granite wash at 2350-2545 feet, with the hole bottomed at 2808 feet, and was drilling in hard granite at 2922 feet, with an elevation of 2791 feet.

TEXAS PANHANDLE

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CARSON COUNTY—		
Holmes et al, Moore-Langdon 5	685	3098
GRAY COUNTY—		
Magnolia, Fee (227) 21	349	2885
Sinclair Prairie, R. W. Harrah 5	282	3250
HUTCHINSON COUNTY—		
J. E. Crisbie, Inc., H. W. Pitts	506	2839

*Failures; †Junked; ¶Million cu. ft. gas.

NORTH TEXAS FIELDS

K-M-A considers curtailing drilling in deep area.

* * *

Panther deep area strike may presage several pools.

* * *

Wildcat 2 1/3 miles east of K-M-A production shows.

Wichita Falls, Texas. — Voluntary curtailment of drilling in the K-M-A deep area is receiving serious consideration by operators as a means of forestalling crude marketing difficulties. Some evidence of a top heavy market for this 40-44 gravity oil has prevailed for several weeks in the form of delayed pipe line connections and tardy tank runs. Development has progressed sufficiently to maintain a major drilling campaign indefinitely through routine offset well requirements, and continuous operations specified in a number of lease purchase contracts.

Field work has registered substantial gains almost without exception every week since mid-November. Extension wells have greatly influenced the volume of drilling. Under a favorable crude market the peak level on drilling was destined to be determined by the supply of heavy duty rigs. It now appears that the market situation may become the governing factor.

Panther Strike Important

Discovery of the Panther deep area in Archer County mid-March, involving structural conditions that indicate a series of pools and fields may be uncovered in the Greater K-M-A district has altered the outlook on deep operations. An abundance of proven undrilled acreage tends to lessen competition. This is particularly noticeable in crude purchasing circles.

K-M-A field operations registered a nominal decline the past week, although 32 new tests were incorporated in drilling report. Currently there are 84 tests in process of completion at the final casing point, and drilling was in progress on 47 additional tests below the surface pipe; 16 projects had landed surface casing. Locations, derricks and inactive tests totalled 56, making a total of 203 operations. Currently the field has 240 producing wells, including more than a score that have not completed the official 3-hour proration gauge. There are 20 pumpers on the completion list, and these average 20 barrels each. Allowable production is estimated at above 13,000 barrels daily.

Additional producing acreage was in prospect for the K-M-A field the past week. C. W. Boller et al's S. Y. Collins 1, situated on the east edge of the Chas. Roberts Survey, A-540, and 3 miles west of the Kadane sand area, cored oil saturated sand at 3865-3880 feet, and has landed pipe for completion with the hole bottomed in lime at 3900 feet. Top of big lime was called at 3768 feet, or 2704 feet sub sea. On this marker it is 60 feet higher structurally than D. H. Bolin & Jim O. Whittington's W. T. Waggoner 1, recent important west extension. The latter's Waggoner 1-A, twin location to the outpost producer, is showing for a 20-barrel pumper from sand at 907-24 feet, which was passed up by the first project.

Eastern Extension

East flank of the K-M-A field offered two important developments. M. T. Flannigan et al's Texas Land & Mortgage Co. 1, NWc Lot 1 and J. McCool Survey, A-192, was credited with showing free oil with gas while drilling cement plugs from 7-inch pipe landed at 3920 feet. Hole is bottomed at 4071 feet. Top of big lime was logged at 3875 feet, or 2885 feet sub sea. It is located about 2-1/3 miles east of nearest production. T. H. Peery and W. C. Woody (was E. J. Stump's) M. P. Bishop 1, L. Netherly Survey, A-240, southeast outpost, is showing for a small pumper after 350-quart nitro shot at 3884-3970 feet. Hole is bottomed at 4043 feet. Big lime was topped at 2770 feet below sea level.

Magnolia Petroleum Company and The Texas Company are the only majors qualifying as being among the most active drilling units. The former has 6 tests in process of completion, or at the final casing point, with two additional operations listed. The Texas Company has 7 active tests, including 4 that have been carried to the final casing point.

Gets Large Well

Burk Royalty Company's Mitchell 1, SWc Lot 11, P. Castleman Survey, A-36, situated in the Kadane sand belt, gauged 210 barrels oil natural in 2 hours from sandy-lime at 3886-90 feet and sand at 3890-3912 feet. This is one of the largest wells on the current completion list.

Interest in the Panther deep pool, north central Archer County, is centered upon the J. K. L. Oil Company's Walter Ford 1, T. Cecil Survey, A-982, 4 miles northeast of the discovery. This wildcat was coring for the big lime marker the past week. Adequate development is now scheduled for the discovery area to prove an early verdict on the magnitude of the producing territory. Blackwell Oil & Gas Company, part owner of the Panther discovery, acquired a lease on the west 80 acres of NE Section 25, north offset to the producer, from C. B. Christie et al for $290,000, half cash and balance payable from production. The latter will receive an additional $50,000 if production is found below the 5100-foot level.

NORTH TEXAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARCHER COUNTY (K-M-A)—		
Lewis Prod. Co., Frey 1, blk 17....	*	4127
ARCHER COUNTY—		
Petroleum Producers Co., Wilson 1-H, lot 257	*	1587
Westmount Oil Co., Shropshire 3, blk 10	85	1775
CLAY COUNTY—		
Deep Oil Dev. Co., McClellan 1....	*	4684
Sussex Oil Co., Shumake 11, blk 4	90	1155
COOKE COUNTY—		
Kingery Bros. et al, Johnson 6.....	240	1240
Mudge Oil Co., Johnson 23.....	40	1235
Pace Pet. Co., Winstead 7-B.....	160	1186
Schermerhorn Oil Co., Kessler 13, blk 5	15	1319
Trumter Oil Co., Andress 18	60	788
JACK COUNTY—		
Benoil Co., Kuykendall 1.....	334	3150
Bennett Pet. Corp., Rhodes 2-A....	*	3309
Brazos River Gas Co., King 4-B, sec 2.....	*	3057
Gillespie et al, Street 1, sec 3339....	*	3395
Rowan-Nichols Oil Co. et al, Matlock 1	319	3112
Worsham et al, Cash 2	300	3253
THROCKMORTON COUNTY—		
Humble, Reynolds Land & Cattle Co. 1, sec 7	*	3895
WICHITA COUNTY (K-M-A)—		
Burns et al, First Nat'l Co. 29, blk 27 1152		3888
L. T. Burns-C. F. McCutchen, First Nat'l Co. 2, blk 27.....	775	3870
Clark-Cowden Drl. Corp.-Southwood Oil Co., Waggoner 1	*	3840
Clyde-Texan Oilfields Co., Burnside 1-A	140	4003
Cooper et al, Waggoner Bros. 48, lot 13	512	3754
Dorian & Jackson, Denny 1.....	520	3940
Haberle & Thornton, Pace 1.....	217	3880
Kadane-Griffith Oil Co., Mangold 2-B, blk 39	744	3797
King Oil Co.-Perkins-Cullum, Ferguson 1, lot 4 1016		3860
F. W. Merrick, Inc., et al, Waggoner 1, sec 35	*	3818
Omohundro et al, Pace 26, lot 23..	808	3856
Pace 27	768	3860
Peckham et al, Munger 2, blk 31..	752	3891
Retsal Drilling Co.-E. C. Laster, Miller 1-A (20.9-ac) 1100		3741
Miller 1-B (37-ac)	696	3861
H. A. Schaeffer Oil Co., First Nat'l Co.-Norwood 4, blk 27.....1200		3833
Stidham & Thrasher, Seay 1 (34.6-ac)	880	3768
Wegener et al, First Nat'l Co. 1, blk 26	720	3868
WICHITA COUNTY—		
Perkins-Cullum, Burnett 16-A, sec 2	5	1536
Pois & Schulz, Foster-Allen 2-K, sec 2	*	2110
Proctor et al, Foster-Allen 28-A, sec 1	350	1649
YOUNG COUNTY—		
Anzac Oil Corp., Graham 1.....	12	4000
Kittery Oil Co., Daniels 5, sec 164..	*	907
Strong et al, Kunkel 2, sec 605.....	750	3956
Texas Co., Finch 14-B, sec 40.....	8	677

*Failures; †Junked; ¶Million cu. ft. gas.

Houston County test cores oil saturation below gas level.

* * *

Most of Rodessa drilling still on Texas side of field.

Tyler, Texas.—Production test of the lower Woodbine near the water level was scheduled for the northwestern Houston County prospective discovery late last week after coring oil saturation below the main gas zone. This waldcat represents the joint efforts of Humble Oil & Refining Company and Sun Oil Company in the northwest corner of the C. B. Dailey tract and Juan La Revier Survey, A-49, 3½ miles southeast of Navarro Crossing. Water was found in core pulled at 5921 feet, with an elevation of 264 feet. Pipe was cemented at 5919 feet, then gun-perforated at 5892-94 feet opposite oil saturation. Assurance of a commercial gasser was attained when formation tester used at 5793-5880 feet indicated a daily yield of 12,000,000 feet of dry gas.

Flag Lake pool, northwestern Henderson County faulted woodbine structure, registered its fourth high-gravity oil producer when The Texas Company's Jarrell 1, southeast diagonal offset to the discovery, flowed 327 barrels initial through tubing choke from sand at 3080-89 feet. Electrical formation survey revealed about 2½ feet of oil saturation. E. T. Dearman et al's Persons-Shell 1, northeast outpost, registered low on structure, and found water in Woodbine at 3119-39 feet, with an elevation of 326 feet. Plugging orders have been issued.

Merica Oil Company et al's New Birmingham Development Company Shell 1, ¾ mile south outpost for the Rusk pool, Cherokee county, found water in the Woodbine series at 5279 feet and was abandoned.

Humble Oil & Refining Company and Gulf Oil Corporation's Robertson 1, sub-Trinity test on the east flank of the Gregg County portion of the East Texas field, lost electrical formation surveying instrument when reading was attempted at 9601 feet in Lower Marine, topped at 9395 feet.

Marion County is active drilling area

Shreveport.—The Jefferson end of Rodessa, in Marion County, Texas, now classified for production purposes as a separate field, continues to be the Rodessa's most active area, six new wells being added there last week. Sixteen tests are drilling there.

On the north end of the field, Shell Petroleum Corporation's Schluter 1, W. Smith Survey, was waiting on cement on final casing string after logging 14 feet of saturation in both Henderson and Gloyd horizons.

Two and one-half miles southwest of Jefferson production, Arkansas-Louisiana Gas Company's J. C. Pitts 1, Charles Lockhart Survey, was drilling in Travis Peak at 6814 feet, contact point on this formation not being given out. This test showed for possible gas-distillate production in the Hill horizon, so far not productive on the Texas side of Rodessa.

In Shelby County, Texas, two and one-half miles northwest of Tenaha, Locke and Ballard made tentative location for W. E. Roller 1, J. Sullins Survey. Humble Oil and Refining Company and Sun Oil Company will aid in drilling this test. In the same county, Republic Production Company has a torsion balance unit working around the old Shelbyville field.

Portex Oil Company is laying foundations for its extraction plant in the Joaquin gas-distillate field, Shelby County where there are three producers, all owned by this company.

Texas permits jump to 612

The Texas Railroad Commission last week approved permits for drilling 612 new wells in Texas, 492 more than were approved the previous week.

Operators in the East Texas field were granted 94 permits, including 44 in Gregg, 36 in Rusk, seven in Upshur, six in Smith, and one in Cherokee County. There were 39 new locations approved in the remainder of the East Central Texas area, including 21 in Cooke County.

There were 52 permits approved in the West Texas District, including 19 in Ector County, while 11 locations were reported from the West Central Texas area.

Operators in the Gulf Coast area reported 100 new locations, including 34 in Brazoria, 24 in Harris, and 10 in Nueces County. Southwest Texas Operators reported 52 locations, including 24 in Duval County.

A total of 254 permits, an accumulation of several weeks, were approved in the North Texas area, including 137 in Wichita, 27 in Young, 25 in Clay, 22 in Archer, 19 in Jack, and 14 in Montague County. Panhandle operators reported 10 locations.

L. D. COADY, assistant to the president of Atlantic Petroleum Purchasing Corporation, Philadelphia, visited the company's Dallas district office the past week. He resided in the latter city prior to last September.

EAST TEXAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
JOINER AREA—		
Atlantic, Keeling 4-A (11.77-ac)	6000	3820
Dearing et al, Finney 13 (39.7-ac)	1200	3660
Elm Oil Co., McElroy 5 (10.17-ac)	6500	3733
Gen'l American Oil Co., Thompson 16 (6.19-ac)	7500	3748
Granite Oil Trust Co., Young 2-N (5.51-ac)	7000	3700
Humble, Gramling-Kirby 5 (31.69-ac)	5500	3662
Hunt Oil Co.-G. H. Vaughn, Young 23 (125.95-ac)	6000	3704
Magnolia, Moores 5 (30.24-ac)	2400	3695
Shell, Brooks 24-B (174.69-ac)	1500	3722
Stanolind, Maxwell 35-A (108.52-ac)	4000	3797
KILGORE AREA—		
Fuller et al, Richards-Shell 5-A (15-ac)	120	3517
Grace Oil Co., Barton 5 (1.43-ac)	2400	3517
Gulf, Alexander 33 (209.1-ac)	8800	3556
Culver 37 (209.01-ac)	3600	3540
Overton Ref. Co., Morris 6 (26½-ac)	900	3659
Pearce & Moore, Laird 2 (½-ac)	1200	3545
Phillips et al, Greggston 4 (55-ac)	960	3605
Roosth & A. S. Genecov, Barker 1, lot 2, blk 154	800	3553
Shell, Moore 20 (140-ac)	8800	3766
Sugar et al, Davis 5 (10½-ac)	7200	3625
Tide Water Associated, Clayton 12 (60-ac)	5500	3603
Tucker et al Wills 7 (56-ac)	4000	3606
LONGVIEW AREA—		
Arkansas F. O. Co., Clemens 7 (30.96-ac)	4500	3639
Atlantic, Duncan 27 (154.7-ac)	9000	3761
Bonds-Dillard Drl. Corp., Barrett 15 (100-ac)	3000	3710
Deep Rock, Jones 24 (61.12-ac)	8500	3695
Fain-McGaha Oil Corp., A. Bauknight 13 (53.4-ac)	†	2077
Humble, Edwards 41 (271.6-ac)	5400	3698
Magnolia, Allen 10 (34.41-ac)	8800	3706
Tuttle 10 (54.66-ac)	10,000	3575
Zeigler 21 (120.62-ac)	9600	3470
Margay Oil Corp., Corbin 13 (55-ac)	8500	3590
Victory 16 (87-ac)	5600	3584
Pewitt et al, Williford 11 (133-ac)	1200	3646
Selby O&G Co.-Lewis Prod. Co., Ingram 13 (80-ac)	10,000	3550
Shell, Stinchcomb 18 (89¾-ac)	7000	3523
Sinclair Prairie, Moncrief 57 (307.7-ac)	7300	3698
Stewart et al, Phillips-Texas Co. 1 (126-ac)	*	3711
Sun, O'Byrne 23 (310-ac)	*	3662
Sun-Seaboard, Akin 30 (163.4-ac)	9200	3538
Haynes 42 (203-ac)	*	3658
Rollins 20 (87-ac)	*	....
Superior, Ingram 28 (163.84-ac)	10,000	3568
ANDERSON COUNTY (Cayuga)—		
Roeser-Pendleton, Inc., Wills 1 (732½-ac)	85	4107
CHEROKEE COUNTY (Rusk)—		
Merica Oil Co.-W. A. Stone, New Birmingham-Shell 1 (80-ac)	*	5279
FRANKLIN COUNTY (Talco)—		
Ajo Oil Corp., Sanders 1 (4-ac)	*	5903
Humble, King 52 (1053.36-ac)	119	4321
HENDERSON COUNTY (Flag Lake)—		
DeArman et al, Persons-Shell 1	*	3139
Texas Co., Jarrell 1	327	3089
TITUS COUNTY (Talco)—		
Humble, Monnig Dry Goods Co. 12 (114.4-ac)	295	4311
LIMESTONE COUNTY—		
Stanolind-Ramsey Pet. Corp., Norris 1	*	9952
CASS COUNTY (Rodessa)—		
Bay Oil Corp., Parker 2, Geo. Crowder sur	30	6068
MARION COUNTY (Jefferson)—		
Ark. La. Gas Co., Howard 1, Thos. Gillespie sur	184	6030
Hayser, Heard & Clardy, Henderson B-2, U. Ewing sur	480	6065
Shell Pet. Corp., D. J. Whelan 1, Thos. Gillespie sur	152	5993
J. C. Robbins, Jefferson & Northwest R.R. 1, R. Bennington sur	456	6017
Union, Hutchinson 6, A. de los Santos Coy sur	504	6107
Dunn & Fisher, Whitfield 1, R. Bennington sur	459	6085
Phillips, Henderson 1, T. Gillespie sur	540	6060

*Failures; †Junked; ¶Million cu. ft. gas.

SOUTHWEST TEXAS

Three new field openers in final stages.

* * *

San Antonio district wildcats hold promise.

* * *

New producing horizon for Goliad County field.

Corpus Christi. — Three new South Texas Gulf Coast oil field openers were in final stages of completion, while another wildcat has been completed as an excellent crude producer to pave the way for considerable development in a present distillate field. Jim Wells County leads with two of the discoveries, while Nueces and San Patricio Counties each have one.

Pressnal and Mosser's Mortgage Investment Company 1, about 2 miles southwest of Alice in the La Vaca Grant of Jackson County, is bottomed at 3496 feet, in 16 feet of oil and gas sand. Casing was landed on bottom and perforated at 3490-95 feet, where completion is being attempted. The test found sand at 3398-3417 feet and on a drill-tem test, seat at 3395 feet, recovered 360 pounds pressure in 3 minutes. The sand carried a good distillate odor. The lower sand was tested from 3480-86 feet, recovering 325 pounds pressure in 5 minutes. The next 10 feet of sand cored showed saturation and was not tested. Elevation is 209 derrick floor.

The above well is 20,000 feet northeast of the two wells drilled by H. H. Howell and associates. It checks sufficiently close with those tests that it is likely both the new test and the others are on the same structure. The Howell operations were not completed as commercial producers due to mechanical difficulties and an offset now is being drilled.

The structure appears to be a large one and may lead to a heavy drilling program. Tom Graham and H. H. Howell each are drilling deep wells on the play, making 4 active operations on the single prospect. It is likely that all of the sands thus far tested and indicated to be productive in several wells are in the Catahoula.

Several miles to the south, but on a separate structure, Earl Callaway and associates have set casing at 6050 feet in R. V. de Garcia et al 1, which is bottomed at 6523 feet. The test attempted to blow out while drilling at 6246 feet, and again after reaching the contract depth. These blowout attempts, however, were believed to have come from sand sections indicated on electric logging device at 4850 and 5370 feet in the Frio. The prospective field opener is in R. E. L. King Survey 62, Abstract 266, and is two miles east of Ben Bolt.

Plymouth Extension

Humble Oil & Refining Company's Smith and Talbert 1, 9200 feet east of the Plymouth field, San Patricio County, was preparing to drill plugs and perforate casing in the Heterostegina (Greta) sand. The well apparently will make some sort of an oil producer to open a new pool in the Plymouth structural group. The test is credited with having cored gas sand 4808-11 feet, cap 4211-12 feet, gas and oil sand 4812-14 feet, oil sand 4814-17 feet, cap 4817-18 feet, gas sand 4818-19 feet, oil sand 4819-22 feet, broken oil sand 4822-29½ feet, cap 4829½-31 feet and oil sand with brackish taste 4831-36 feet. A series of drill-stem tests between 4804 and 4828 feet recovered pressures ranging from 425 to 600 pounds with some oil and oily mud. A test from 4829-36 feet recovered 350 feet of salt water and a scum of oil in 4 minutes. Pipe likely will be shot around 4820-25 feet for the completion attempt.

The test is located in the northwestern portion of Lot 2, Section 37, Fourth Addition to Taft Farm Lands Subdivision. It is on the same general structure with the Plymouth and Taft fields, but believed to be an entirely separate field. The production in Plymoutth field is from the Frio sands ranging from 5500-5160 feet, while production in the Taft field ranges from 3900 to 4900 feet in the Catahoula, Discorbis and Heterostegina section. Salt water is encountered in the Heterostegina sand in the Plymouth area.

Plymouth Oil Company's W. H. Nelson 1, east offset to the discovery well at East White Point, reportedly cored the sand 24 feet lower than the west offset, but flowed on a 12-minute drill stem test. The sand was found at 5681-86 feet, where completion is being effected. Smith Drilling Company's well several thousand feet to the southeast, found the sand much lower and was abandoned after showing salt water.

Good Well at Agua Dulce

Union Producing Company materially increased the value of the Agua Dulce field, Nueces County, with its J. W. Torbett 1, Section 31, which flowed at the rate of 480 barrels of 40 gravity crude per day through ¼-inch choke after perforating casing in a new sand. The test had been carried to 7700 feet, set casing at 5495 feet and perforated at 5295-5307 feet. The flow has been cut back to about 75 barrels per day through ⅛-inch choke with pressures 950 pounds on tubing and 1375 pounds on casing. This is an important strike as the wells heretofore have been much smaller oil producers with very high gas volume. Likewise, the oil has been more of a distillate nature than crude.

Sinclair Prairie Oil Company brought submerged production into being in South Texas when State of Texas 1, in Laguna Madre, Flour Bluff field, Nueces County, flowed several barrels of pipe line oil per hour through ⅛-inch choke after perforating casing 6653-60 feet.

South Oil Company's H. S. McCann 1 proved a 2/3-mile south extension to Luby fields' 4300-foot zone when it recovered 300 feet of oil, 7 feet of oily mud and 100 pounds working pressure in 10 minutes at 4308-25 feet. The test is now coring for the 5000-foot zone. West of the field, Seaboard Oil Corporation was going ahead below 7100 feet on a deep operation. It is John Luby 7, 3732 feet from nearest production.

Turkey Creek field rapidly was being defined as several wells either missed the regular sand or in finding it, developed salt water. These wells are being carried ahead, and their outcome will have an important bearing on future possibilities in this field.

New field opening in Duval County

Laredo.—V. G. Schimmel was recovering several barrels of oil and some salt water from E. R. Hagist 5 to open a new Government Wells sand field 1½ miles west of Seven Sisters in Duval County. The well showed considerable oil when swabbed, but pumping was required to lift the crude. It is bottomed at 2196 feet in six feet of sand. Pipe was landed at 2176 feet. The new producer, on the upthrow side of a fault, is in Section 265.

Along this general trend an intensive wildcatting program to shallow sands is getting under way. Deals already made provide for immediate drilling of six explorations.

In the northwestern portion of this county, Stratton Oil Company's W. F. Applerbach 1, Section 342, has been abandoned after swabbing salt water from the Mirando sand at 1082-90 feet, casing having been set atop the sand. It was attempting to prove production on a supposed shore line. About 1½ miles west of this well, Loma Novia Oil Company is testing Mabel Adami 1, Section 354, through perforations in sand at 1012-17 feet. Test was carried to 1205 feet by W. S. Hill, then abandoned. It was taken over by the new concern and casing cemented for the production test.

Navarro Oil Company apparently defined the North Sweden field, Duval County, on the west after drilling to 5443 feet and showing salt water or dry in all sands. The well is E. B. Momeny 1, SE SW NW Section 8.

Balcones Fault area has several prospects testing

San Antonio.—Testing was being continued late in the week in several wildcats which give some promise of opening new Cretaceous producing areas in the San Antonio district. After testing for several months, H. A. Pagenkopf and L. C. Jamieson shot Houston Estate 1 on the Frio Town prospect in Frio County, with 120 quarts of nitro at 2607-51 feet and were cleaning out. The well made a small oil producer with a lot of water upon first completion. Additional work is planned in the area, centering around Juan Figuerroa Survey No. 151, in the event this well fails to materialize.

Also in Frio County, Humble Oil & Refining Company's long worked structure at Pearsall will be given a test. D. M. and F. L. Thomson, Jr., have staked a location and let contract to George E. Smith for the drilling of San

Antonio Joint Stock Land Bank 1 in GBCNRWC Survey No. 1. The test was located by the Humble which is participating in the financing of the project. The prospect was core drilled, as well as being worked from a geological and geophysical standpoint. The well is projected to the Edwards limestone, expected around 5500 feet.

Chittim anticline has several interesting wells. Paul C. Teas and Maryland Corporation have completed a deal and casing is being moved in for S. E. McKnight 1, Section 23, several miles northwest of Carrizo Springs in Dimmitt County. Well is bottomed at 7070 feet, 46 feet in the Edwards limestone. Casing will be landed near the top of the formation for tests. Northwest and on strike, Wellington Oil Company is below 4000 feet in Chittim 1-A, while Chittim 1, 2910 feet east of Chittim field is at 5688 feet in Glenrose, having found slightly porous streaks of the limestone between 5500-5600 feet. It is being tested.

A shallow serpentine pool, result of a magnetomer survey, is expected to be opened over the week end 2 miles southwest of Dunlay, Medina County. Ewing Oil Company's E. G. Riff 1, Section 42, is bottomed in serpentine at 716 feet, top of the formation being 542 feet. A part of the formation was porous and carried good oil shows. Two more tests are being drilled on the prospect.

Owens and Van Wagen's M. L. Smith 1, 3200 feet southwest of the Branyon field, Caldwell County, is bottomed at 2323 feet and testing. It set casing at 2112 feet after topping Edwards limestone at 2321 feet. The hole was acidized with 200 gallons and has shown a small amount of oil. A light well is expected.

Willacy wildcat has long drill string on hand

Mission—Magnolia Petroleum Company was connecting up to drill plugs in F. Armendiaz 1, wildcat near Raymondville in Willacy County, after running a string of 8⅝-inch casing to 9635 feet for protection purposes. The well is bottomed at 9641 feet. The company has 12,300 feet of 3-inch drill pipe in the racks for use in carrying this hole to a record depth for the Rio Grande Valley.

In the same county, Sal Vieja Oil Corporation's Garcia 2, near the Kenedy County line, was going ahead below 8300 feet, expected to be carried to 10,000 feet.

Gulf States Oil Company's J. Cardenas 1, 2 miles northwest of the Mestinas field, Hidalgo County, was coring around 7500 feet, while Union Sulphur Company's American 12, east outpost to the Mercedes field, was spudding on a 7500-foot project.

Wheelock & Collins have recovered several thousand feet of stuck drill stem in Guerra 1 on the LaReforma prospect in Starr County, but near the Hidalgo County line. Pipe was stuck several weeks ago at 6609 feet, when the well blew out and made a large volume of gas and sprayed some oil and salt water.

Humble Oil & Refining Company is commencing an exploratory campaign on its block of leases along this trend. The first test is Anna Kelsey Bass 1, in San Rafael Grant, southern Jim Hogg County. The Humble recently added 134,000 acres of the W. W. Jones Ranch to its holdings, the deal being made with the Mestina Oil & Gas Company. Acreage is located in Brooks and Jim Hogg Counties. In addition to nearly 2,000,000 acres acquired from the King Ranch, the Company had vast holdings along trend.

New producing zone west of Maetze in Goliad

Beeville.—A new producing zone in a 2250-foot northeast extension is in evidence in the Maetze field of Goliad County where H. J. DeArman and Winward Oil Company are preparing to complete O. G. Drier 1. The test, in Section 7, is at 3814 feet in sidetracked hole, having cored 12 feet of oil and gas sand. A drill-stem test recovered 500 pounds pressure and a little free oil in 6 minutes through ¼-inch chokes, top and bottom. A second test, using a 750-foot water cushion, recovered no pressure, but showed some oily mud. Completion will be via gun perforation. The well previously had been drilled to 5535 feet, where drill pipe was stuck and the well ran wild, resulting in one workman being killed.

James B. Chew and associates will make a further effort to develop oil production on the Dougherty prospect of southern Live Oak County. The first test was a small gasser at 5076 feet in the Pettus sand.

Twenty acre spacing for Clear Lake field

An emergency order, issued by the Texas Railroad Commission last week, provides 20 acre spacing in the new Clear Lake field, Harris County, where the West Production Company is completing its first well.

The order also announced that a hearing would be held in Austin on April 19 to fix permanent rules for the field.

J. C. HEBER, shop superintendent at Franklin, Pennsylvania, for Charles N. Hough Manufacturing Company, discussed oil well supplies and pumping machinery before a meeting of the Northwestern Pennsylvania Society of Engineers held at Oil City last week.

SOUTH TEXAS Completions

SAN ANTONIO DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
BEXAR COUNTY—		
Harrison, Fain & Smith, Schuwirth 1, J. A. de al Garcia grant	*	1275
Hickok & Reynolds, Ewert 1, York survey	*	3006
CALDWELL COUNTY—		
Diamond Half Oil Corp., Nathan Byrd Est. 4 (Luling)	25	2089
Martell Petroleum Co., Teas 1 (Branyon)	35	2353
Philtop, Dorn 7 (Luling)	84	2095
EDWARDS COUNTY—		
Evans & Love, Brown 1, G. W. T. & P. survey	*	6250
GUADALUPE COUNTY—		
Straser, Eickenroth 1, Esnesurizer survey	*	lcn.
MILAM COUNTY—		
Jones, Coffield 3, (Minerva Rockdale)	5	680

CORPUS CHRISTI DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
ARANSAS COUNTY—		
Atlantic, McCampbell Ranch B-7, (McCampbell)	*	lcn.
Porterfield B-13 (McCampbell)	550	7220
BEE COUNTY—		
Luling, Page 1, B. O. Hadley sur.	*	3930
BROOKS COUNTY—		
Standard, Mestena Oil & Gas Co. 7 (Ise, 1) (Alta Mesa)	149	2491
CALHOUN COUNTY—		
Humble & Plymouth, Marshall 7 (Heyser)	525	5490
DE WITT COUNTY—		
Howeth, Fuhrken 1, J. H. Walton survey	*	4506
JACKSON COUNTY—		
Harrison, Wearden 1, James Williams survey	*	5346
JIM WELLS COUNTY—		
Magnolia, Seeligson 8, Los Jaboncillos grant (E. Premont)	1250	6593
Martin, Palmer 1 (West Premont)	47	2342
LIVE OAK COUNTY—		
Culton, Wedding 2, Bridget Haughy survey No. 1	*	2805
Dail, Herring 1, Stephen Hays sur.	*	1210
Richardson & Karotkin, Poppe 1, 5 miles northwest Oakville	*	3014
NUECES COUNTY—		
Andrade III, Dunn 2 (Turkey Creek)	350	5828
Maryland & Warren, Blucher 1 (Saxet)	†	6192
Pan American Prod. Co., Sagarino 4-B (Saxet)	240	6924
Renwar Oil Corp., McKinzie 8 (Turkey Creek)	650	5844
McKinzie 9 (Turkey Creek)	475	5809
Seaboard, Luby 17 (Luby)	450	5179
Shaffer 6, (Luby)	*	5081
Sinclair Prairie, State 1 (Flour Bluff)	500	6666
Union, Torbett 1 (Agua Dulce)	900	7700
REFUGIO COUNTY—		
Houston, Pratt-Hewitt-Rooke 39 (Refugio)	500	6205
Quintana, Heard 16 (Tomoconner)	2500	5925
Union, Lambert 70 (Greta-Tomoconnor)	600	6150
SAN PATRICIO COUNTY—		
Smith, French-Shares 1, Section 65 (E. White Point)	*	5716
VICTORIA COUNTY—		
Barnsdall, McFaddin 6 (McFaddin)	500	4384
Transwestern, McFaddin E-4 (McFaddin)	450	4396

MIRANDO DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
DUVAL COUNTY—		
Arkansas, Wolfe 2 (North Sweden)	900	5361
Bridwell, Ancira 12 (N. Sweden)	275	4790
Circle, West 2-A (N. Sweden)	300	5360
Cole, Benavides 101 (Cole)	*	1807
Cox & Hamon, Cuellar Bros. 6 (Hoffman)	127	2573
Hoffman 6 (Hoffman)	26	2912
Gier & Kone Prod. Co., Peters 4 (Peters)	¶60	2551
Government Wells, Lundell 20 (Lundell)	48	1520
Magnolia, DCRC 27 (Piedra Lumbre)	35	2015
Labbe Ranch 15 (Labbe)	*	3911
McCarthy, Placker 5-A (N. Sweden)	460	4568
Pan American, Welder Heirs 10-A (Seven Sisters)	80	1698
Reynosa, Welders Heirs 4 (Seven Sisters)	375	2640
Southwood, Rossi, B-1 (N. Sweden)	¶10	5497
Walstead 3 (N. Sweden)	220	5364
Standard of Kansas, Southland 8 (N. Sweden)	16	5476
Stratton, Applerbach 1, Survey 342	*	1090
McMULLEN COUNTY—		
Howard, Claunch 10 (S. Calliham)	15	1064
Marion, Calliham 3 (Calliham)	10	1074
STARR COUNTY—		
Lewis, Guerra 1, Porcion 55	*	1505
WEBB COUNTY—		
Brooks, Uzzell 4 (Killam-Oilton)	160	2005
Daubert & Lipscomb Garcia 3 (Killam-Oilton)	115	2009
Garcia 4 (Killam-Oilton)	124	2004
Garcia A-6 (Killam-Oilton)	89	2030
French Oil Corp., Benavides 4, Survey 1122	*	2207
Jones, Pena 2 (Killam-Oilton)	115	2015
Killam, Bruni 61 (Cole-Bruni)	175	3450
Lanning & Coffield, Sullivan 1 (Killam-Oilton)	*	2030
Sullivan 2 (Killam-Oilton)	*	lcn.
Sullivan 3 (Killam-Oilton)	*	lcn.
Lewis, Garza 1 (Carolina-Texas)	*	2692
Magnolia, Brannan-Benavides 46 (Cole-Bruni)	¶10	3294
Oil Well Drilling Co., Garcia 2 (Oilton)	72	2009
Randon Oil Co., Swift 1, Survey 746	*	1610
Windsor Oil Co., McLandrich 3 (Killam-Oilton)	*	lcn.

*Failures; †Junked; ¶Million cu. ft. gas.

TEXAS GULF COAST

Test indicates Sparta will pay off on Conroe trend.

* * *

Clear Lake wildcat makes gas and salt water on test.

* * *

Accident brings first commercial well to Labelle.

Houston.—Gulf Oil Corporation is proving that Sparta formation along the Conroe trend will pay off. Last week it discovered a new sand at Segno in Regan 2, I. & G. N. Section 15, at 8156 feet. This is the same deep sand which is found at Spurger in Tyler County, the first field in the Texas Gulf Coast to produce from Sparta formation. Regan 2 will cause deeper drilling along the Conroe trend and also further down dip in the salt dome belt.

After missing the regular Cockfield pay, Gulf drilled Regan 2 to 8183 feet in shale where an electrical logging device was run. The well logged the main body of Sparta sand at 8156 feet and bottomed it at 8170 feet. A 20-minute drill stem test from 8146 to 8171 feet showed 2540 feet of 37 gravity oil, 60 feet of oil cut mud, no salt water and a 140-pound pressure through ¼-inch chokes. A previous drill stem test from 8099 to 8105 feet recovered seven feet of mud in seven minutes; another, from 8105 to 8117 feet showed 10 feet of oil and 30 feet of mud and an eight-pound pressure in 25 minutes.

Is Second Deep Sand

This is the second deep sand Gulf Oil Corporation has discovered at Segno. The first was in Saline Bayou formation at 6261 feet. That well came in making over 750 barrels of pipe line oil daily. It is one of the best in the field. Gulf has not completed a second well in the Saline sand. Regan 2 is the deepest well ever drilled at Segno.

Humble Oil & Refining Company is attempting to pick up the deep sands in Kirby Lumber Company B-8, M. Victor Survey, at Segno. Last week the well was drilling shale at 6700 feet.

One of the most disappointing wildcats in the Texas Gulf Coast is West Production Company's Sowden 1, at Clear Lake, Harris County, which last week perforated casing with 44 shots from 5970 to 5990 feet after setting cement plug 40 feet off bottom. The well came in flowing gas and salt water and was killed. Perforations were squeezed with cement for another test. Sowden 1 showed a tubing pressure of 800 pounds and a casing pressure of 1000 pounds. After being shut in the well showed a tubing pressure of 1000 pounds and a casing pressure of 1200 pounds.

Some reports state Sowden 1 has over 300 feet of solid oil sand; some state that it has 120 feet. Others, however, are of the opinion that the well only has 43 feet of sand, from 5852 to 5895 feet, and that the operators evidently perforated too low to make a producer and will test higher. No visible storage tanks have been erected, it is said. Yet, an emergency order has been issued for one well to eash 20 acres.

West Production Company has made location for Fee A-1, 2350 feet east of Sowden 1 and in the G. B. McKinstry Survey. Approximately 4000 feet north of Sowden 1, Chapman Minerals Corporation's Harrison 1, W. M. Jones League, Harris County, was coring in shale below 5600 feet last week and is reported to be running around 200-feet low on structure.

Hard Luck Gets Well

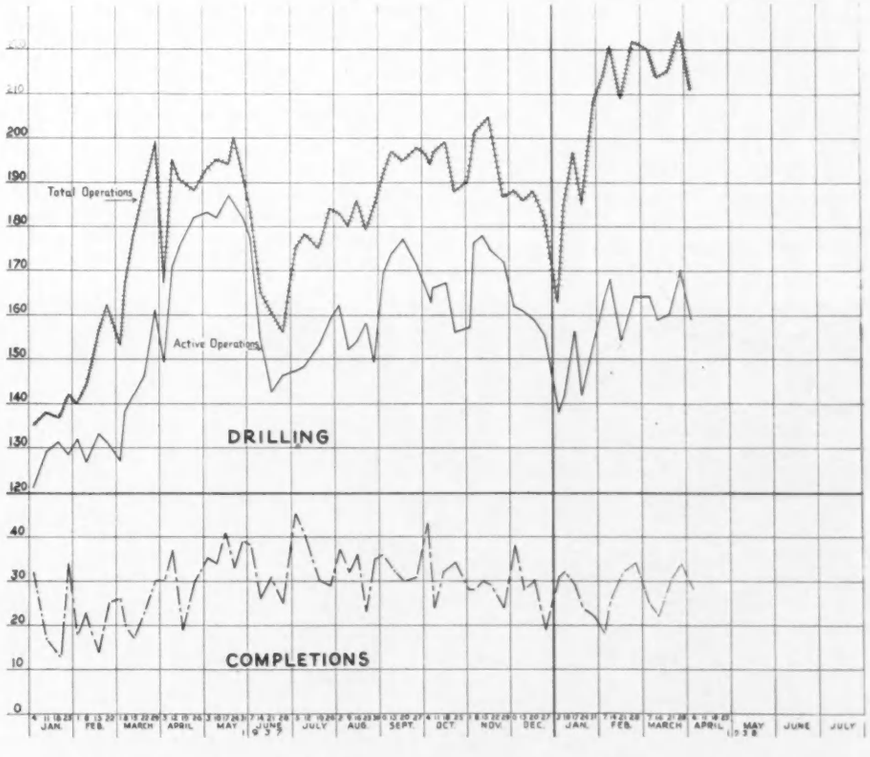
Hard luck some times turns out to be good luck for Texas Gulf Coast operators. Sun Oil Company stuck four-inch drill pipe at 8622 feet in a Labelle test, Jefferson County. While going in with 1½-inch drill pipe in Broussard Hebert 3, B. Blackmon Survey, to cut loose the four-inch drill stem the well started blowing out. Pressures went up to 5500 pounds and the well came in making 800 barrels of distillate daily as Labelle's first commercial oil well. After a Christmas tree was installed the well made 382 barrels of distillate in 11 hours through the open four and 1½-inch drill stem. At the end of the week it was flowing into storage tanks at the rate of 933 barrels, along with 71,000,000 cubic feet of gas, daily. Pressures on the drill stem were 750 and 850 pounds.

At Ogburn, Harris County, O. W. Killman's Sweeney Estate 1, G. Williams Survey, is one of those wildcats which have operators guessing. Opinions differ on the test. Some are that the well will make a producer while others state that it will not. Sweeney Estate 1 was drilled to 6736 feet in shale and logged top of the Cockfield at 6383 feet. A few feet of sand cored from 6535 to 6545 feet had an odor of oil. The hole was then cored to 6560 feet. After drilling the operator took 10 side wall samples at 6535 to 6560 feet and ran an electrical logging device which showed 5 ohms and 70 millivolts. Casing was set at 6634 feet and will be perforated for a test.

The Aldine prospect, Harris County, will receive another wildcat test. Jack Frazier announced location for R. Gellispie 1, 310 feet west of highway 75 and 503 feet north of the center line of S. Contreas Survey, or 3300 feet from the north line and 2100 feet from the west line of the survey. The well will test the Cockfield and Saline Bayou formations.

Fairbanks Outpost Has Trouble

About 8000 feet east of the discovery well at Fairbanks, Harris County, Amerada Petroleum Corporation and Stanolind Oil & Gas Company are hav-



Drilling activity in the Texas Gulf Coast (east of the Colorado River)

ing considerable trouble completing White 1, J. Clarkson Survey. Last week the well was perforated with 47 shots from 6827 to 6835 feet and from 6843 to 6850 feet. It came in flowing 25 barrels per hour, four percent salt water, through a quarter-inch choke.

Two new wells are on the sand at Fairbanks. Smith and Owenby's Myers 2, Geo. Ayers Survey, was waiting on cement to set at 6851 feet around 5½-inch casing. Top of the oil sand was logged at 6833 feet and the hole is bottomed at 6857 feet. H. C. Adams' Dawson 1, W. K. Hamblin Survey, logged top of the oil sand at 6800 feet and was coring sand showing oil at 6832 feet.

On the south flank of Humble field, Harris County, J. A. Deering was completing Lee 2, E. Ruhle Survey. The hole was drilled to 4599 feet in sand showing oil. Casing was perforated with 40 shots from 4074 to 4099 feet and it came in flowing 25 barrels per hour through a quarter-inch choke with a tubing pressure of 500 pounds.

TEXAS GULF COAST Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ANAHUAC—		
Humble, Zapps 12	644	7085
DICKINSON—		
Pure, Shelor B-5	410	8005
FRIENDSWOOD—		
V. H. Borsodie, Berlowitz 2	*	6220
HASTINGS—		
Humble, Haden 12	667	6080
J. Simmons, Alexander 4	645	6090
Stanolind, Bisbee 2	*	6144
HUMBLE—		
Corsby Dr. Co., Brazo Oil Co. 8	227	1372
LOCHRIDGE—		
Gulf, Wilkes & Smith A-6	386	6368
TOMBALL—		
Humble, Martens 2	504	5571
Stallons B-2	¶2¼	5580
WEST BEAUMONT—		
G. H. McCarthy, Longe 8	326	5400
WEST COLUMBIA—		
A. Moore, Gulf Oil Corp. 2	300	5416
Sterling, Munson 1	627	5586
Texas Co., Abrams 19	597	5429
WITHERS—		
Texas Co., Thompson 7	303	5551
FORT BEND COUNTY—		
Lomack Oil Co., Armstrong 1, n of Boling, S. Miller sur.	*	6022
JEFFERSON COUNTY—		
I. E. Harwell, State 1, offshore of Jefferson County, tract 72	*	5821
WHARTON COUNTY—		
Strake, Poole 1, Lissie area, G. H. & R. R. R. sur.	*	7012

*Failures; †Junked; ¶Million cu. ft. gas.

Sulphur Rights Leased at Brenham; Deep Oil Test Planned

By CHARLES B. LEYENDECKER
Staff Writer

VIRGINIA OIL COMPANY (C. H. Lane) will attempt to open a new producing horizon along the upper portion of the Texas Gulf Coast. It is planned to drill a deep test on the flank of old Brenham dome, Washington and Austin counties. Chas. H. Lane and associates have leased around 3600-acres in this area for oil and sulphur development. Over 1200-acres have been subleased to Freeport Sulphur Company for the sulphur rights. This is one of the furthest inland salt domes to show sulphur along the Gulf Coast.

Plans for immediate development of sulphur deposits on the Brenham salt dome became known last week following the sale of 1200-acres to The Freeport Sulphur Company. The consideration was not made public.

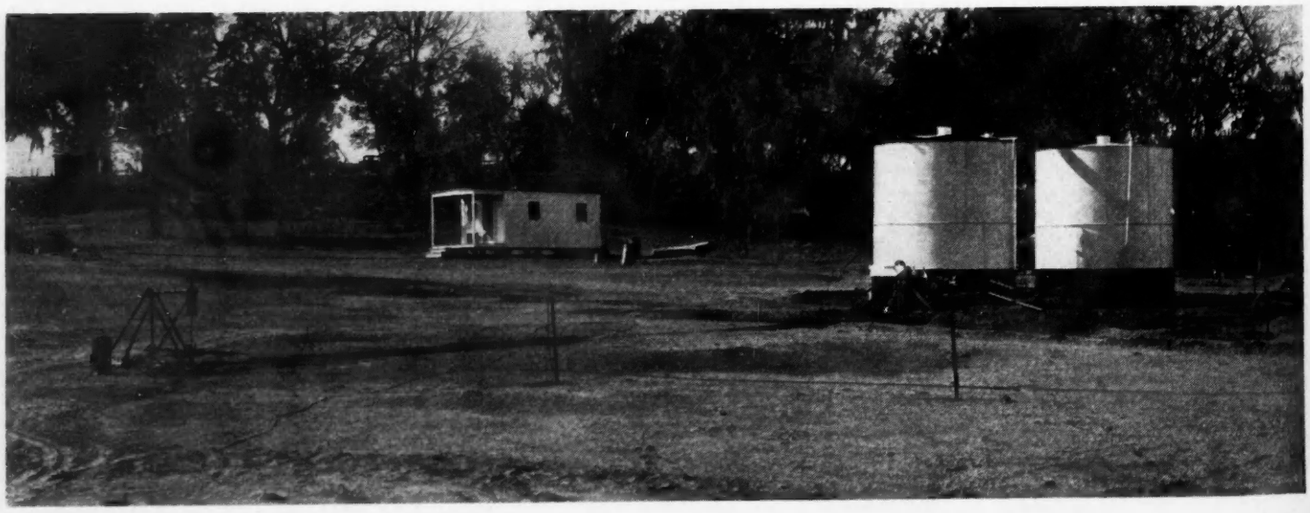
The properties acquired for sulphur development are encircled by a heavy black line on the accompanying map. Only the sulphur rights were assigned to Freeport Sulphur Company and any oil which might be developed on the 1200-acres belongs to Chas. H. Lane and associates. It is stipulated in the agreement while core drilling for sulphur on the dome that if any shows of oil or gas is encountered it is to be reported to the lessees.

Brenham has been known for a long time for its sulphur possibilities. The field was discovered October 8, 1915, when Brenham Oil Company's Schuerenberg 2 came in for 25 barrels of oil daily at 1450 feet. Later developments uncovered shallower sands carrying oil productions. Numerous tests drilled on the structure to these shallow levels uncovered sulphur possibilities.

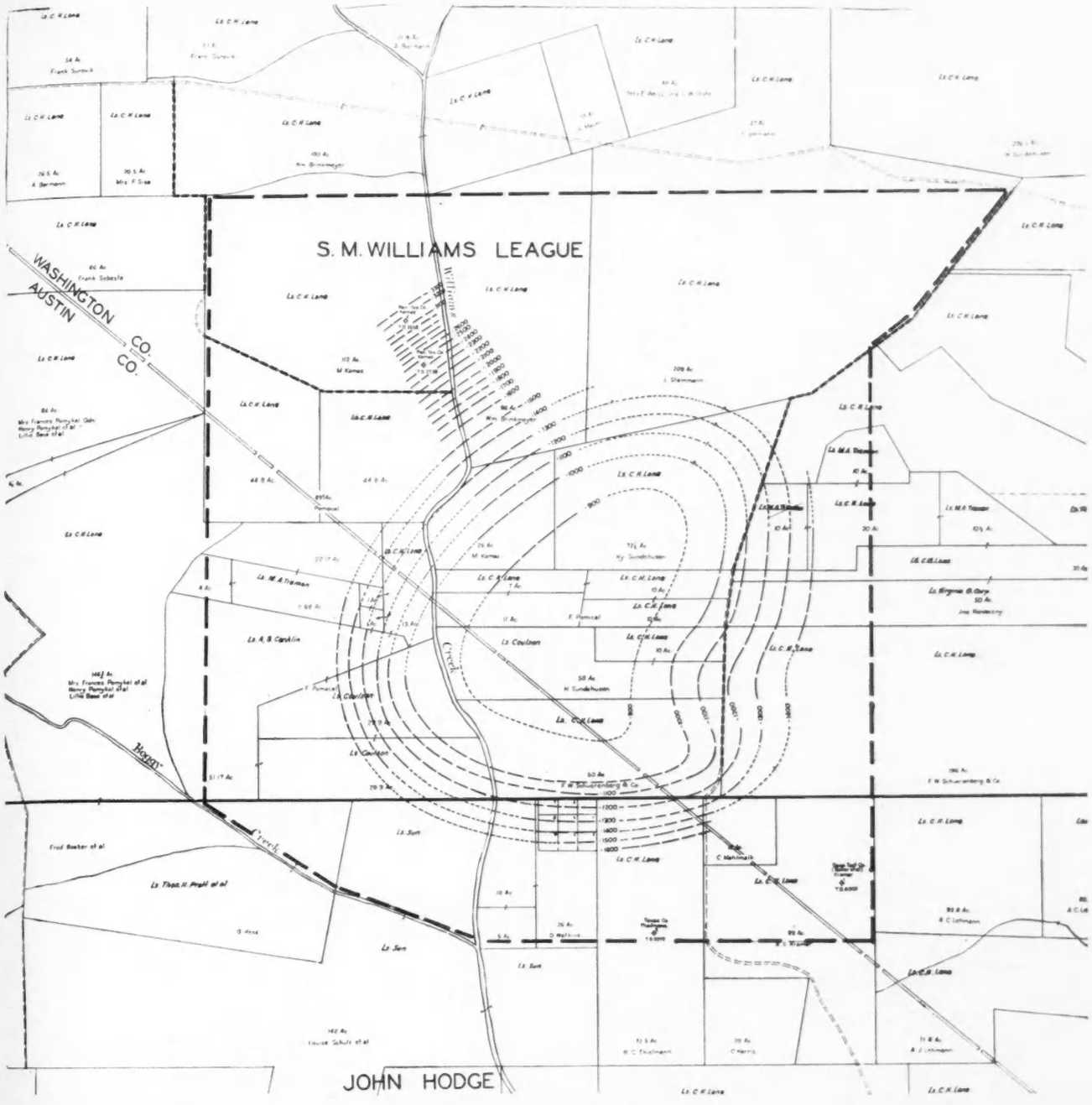
Virginia Oil Company have several shallow wells producing oil on top of the dome at Brenham. The company has cored several tests for geological information and found that deeper sands exist at Brenham. The planned deep test probably will be carried to the Wilcox formation. All production at Brenham to date has been found in the Catahoula and Upper Jackson formation on the apex of the dome. The cap rock is found below 900 feet and the salt around 1150 feet. Only a limited number of tests have been drilled below these shallow sands on the flanks of the structure and only a few of these have been carried as deep as the Cook Mountain formation. According to several leading geologists the properties are looked upon as having considerable possibilities from an oil producing standpoint in the lower sands.

At Clay Creek, Sun Oil Company drilled a deep flank test in Lauter 1, and it encountered the Wilcox formation and showed evidence of oil in that formation. It prompted Sun Oil Company to lease several thousand acres along the trend for the deep sand. Clay Creek is about 20 miles northeast of Brenham and has had production at deeper levels. Raccoon Bend, about 20 miles southeast of Brenham has production in the Miocene, Jackson and Yegua formations. Deep wells in this field have had shows in Wilcox formation. The showings in deep formations at Clay Creek and Raccoon Bend, nearest production to Brenham, indicates that the latter dome has possibilities of production in the Wilcox formation.

Probably the first deep test for Brenham will be on the east flank of the dome near the old Deep Test Com-



One of Virginia Oil Company's shallow producers at Brenham. The oil is being pumped from about 290 feet, and is turned into two 500-barrel storage tanks.



Contour map of Brenham salt dome on the line of Washington and Austin Counties. The area within the heavy dashed line has been leased for sulphur development.

pany's Kramer 1, which was abandoned at 4001 feet. This well was drilled to the Sparta formation and had sand and shale. The estimated depth of beds under this tract below the Sparta are: Weeches, 4100 feet, clays; Queen City, 4250 feet, sand and shale; Reklaw, 4500 feet, shale; Carrizo, 4700 feet, sand; Wilcox, 4775 feet, sand and shale; Midway 6575 feet, shale; Navarro, 7675 feet, shale. It is probable that the Navarro formation would extend down to 8675 feet. It is believed the east flank test should encounter the Wilcox around 6500 feet, and this side of the field has better possibilities because it is steeper and offers a better chance of trapping.

Virginia Oil Company is the first company at Brenham to use modern methods in completing wells. They are the first ever to use an electrical logging device and the first to ever use cement in completing wells. The company's Konieczny 1 was drilled to 2171 feet and was drilled for geological information. The operators moved over to Konieczny 2 and made a producer at 492 feet. Three other wells were bought by the company in the field which yield around 25 barrels of production daily.

In completing several wells on the apex of the dome, Virginia Oil Company did considerable subsurface work and saw possibilities of sulphur development. There have been 25 wells producing in the field for the past 10 years. These wells are producing from around 260 feet. Virginia Oil Company has the deepest production at 492 feet.

When plans for the deep east flank test are ready the operators will move in a heavy modern rotary drilling rig. Modern technique of drilling will be used and also will be the first of its kind for this old field. Probably the Virginia Oil Company will do a little geophysical work before drilling is commenced.

Hardin hearing set for April 11

The Texas Railroad Commission has scheduled a hearing on the Hardin field, Liberty County, for April 11 at Liberty, Texas.

The purpose of this hearing is to determine rules for the spacing, drilling, completion and operation of wells in the new area.

SOUTH LOUISIANA

World's second deepest hole plugs back to test.

* * *

Union Sulphur Company gets new sand at Big Lake.

Lake Charles.—The second deepest well in the world will plug back from its bottom at 13,210 feet to test gas and distillate sands logged around 9145 feet. Amerada Petroleum Corporation and Stanolind Oil & Gas Company's Calcasieu National Bank 3-B, Section 27-7s-3w, South Elton area of Jefferson Davis Parish, is second only to the California well currently testing at 15,004 feet, and also the second well to pass the long-established record of 12,786 feet held by a West Texas operation.

Production from a new sand at Big Lake, Cameron Parish, was established when Union Sulphur Company's J. O. Hebert 2, Section 18-12s-8w, came in flowing 225 barrels of 40.7 gravity oil from 6783 feet. The well had been drilled to 9189 feet and 7-inch casing set at 9180 feet, and after a series of tests up the hole it was shut down until the same company's Miami Corporation 1 cored the new pay. Casing was perforated with 25 shots from 6779 to 6783 feet. Initial flow was through 7/64-inch choke, tubing pressure 1825 pounds; at the end of the week the flow was 195 barrels of fluid, 15 percent salt water, and tubing pressure was off to 1080 pounds.

At East Hackberry, Cameron Parish, The Texas Company is coring in a sand showing oil in a deeper horizon. State 24-B had 26 feet of good saturation, as revealed by an electric core, between 7768 and 7794 feet. Further coring is in progress and unless something more interesting is found, pipe will be set for testing at the above depth.

In the Woodlawn area, Jefferson Davis Parish, Union Sulphur Company probably will core to 9000 feet in Calcasieu National Bank 2, Section 12-9s-6w, before making a test at 8614-8620 feet, where an odor of oil and gas was detected.

Stanolind Oil & Gas Company has made a second location in its effort to find flank production at Welsh, after abandoning Conover 1 at 7311 feet, electric log having been run to bottom. Conover 2 is 660 feet north and 990 feet west SEc 20-9s-5w, in which section the first test also was located.

At North Crowley, Acadia Parish, Humble Oil & Refining Company's Trahan 1 is below the usual production depth and has set casing at 9780 feet as a precaution before going deeper. The company's Smith 1, Section 44-8s-1e, set 7-inch casing at 8477 feet, perforated with 11 shots at 8280-8285 feet, and swabbed salt water. Preparations were under way to perforate again. Location has been made for Davis 1 in Section 45-8s-1e.

Superior Oil Company was coring in Benson-Vincent 1, southwest of production at West Hackberry, Cameron Parish, after 7-inch casing had been set at 6287 feet to case off gas that had blown out twice, sticking the drill pipe in both instances.

In the West Lake Verrett area, St. Martin Parish, Shell Petroleum Corporation and Tide Water Oil Company abandoned Adams 1, Section 11-14s-12e, after carrying the hole to 10,000 feet. It was reported that a large body of sand was logged, but several drill-stem tests yielded only salt water. Some interest was aroused when odors of oil were reported around 8290 and 8770 feet. Shell Petroleum Corporation has moved south with a proposal to go to 10,000 feet in Jeanerette Lumber Company 1, Section 14-14s-14e.

Humble Oil & Refining Company got salt water again in Wilbert 6, Section 66-9s-11e (Blue Bayou). A 14-minute drill-stem test through ¼-inch chokes from 6780 to 6804 feet returned 120 feet of mud and 1350 feet of salt water, with no pressure. Previously a test at 6531 feet showed 1300 feet of salt water.

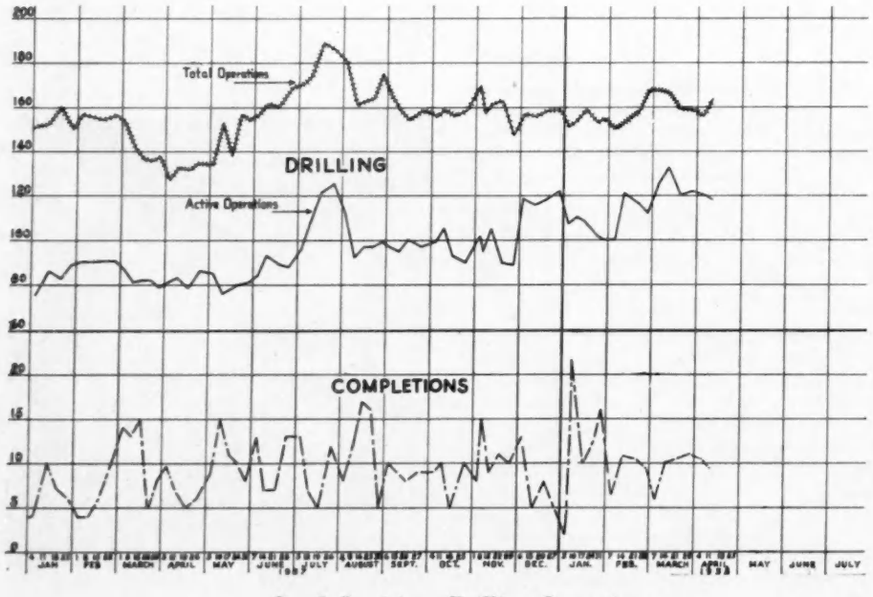
On the northwest side of Port Barre, St. Landry Parish, Pan American Production Company made location for Cormier 5, 3050 feet north and 170 feet west from the Cormier lease in Section 4-6s-5e.

In the Bristol-Sunset area, St. Landry Parish, Western Gulf Producing Company made location for E. M. Boagni 1, C S½ NE SW of Section 7-8s-4e.

Fohs Oil Company was drilling down to the 9400-foot producing horizon at Lake Long, Lafourche Parish, in State 4, Section 17s-19e. A drill-stem test at 8547 to 8553 feet recovered 7 stands of clear water and 71 stands of salt water in 20 minutes through ¼-inch chokes.

The second well at Quarantine Bay, Plaquemines Parish, to reach the 8177-foot producing horizon did not look so good last week. Gulf Oil Corporation's State QQ 4, Section 17-19s-17e, made a drill-stem test at 8135 to 8227 feet and recovered 540 feet of oily mud, 60 feet of oil, 640 feet of salt water, 15 feet of sand, good blow and no pressure in 10 minutes through ¼-inch chokes.

The second well at Horseshoe Bayou, St. Mary Parish, is below the 10,850-foot producing sand. The Texas Company's St. Mary Land Company 1, Section 37-17s-9e, was reaming at 11,022 feet last week in water sand. It is believed that the company will carry the well to the 12,000-foot sand which caused the discovery well to blow out.



South Louisiana Drilling Operations

SOUTH LOUISIANA
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BIG LAKE—		
Union Sulphur, J. O. Hebert 2	190	6783
FOUR ISLE—		
Texas Co., State 9	*	10,725
JENNINGS—		
Superior, Leckelt 11	375	6735
SORRENTO—		
Pan American, United Lands 9	384	1333
SULPHUR—		
Union Sulphur, Fee 856	250	4856
VALENTINE—		
Pan American, Community 1-B	*	8843
VILLA PLATTE—		
Continental, Tate 1	263	9062
JEFFERSON DAVIS PARISH—		
Stanolind, Conover 1, w of Welsh, 20-9s-5w	*	7311
ST. MARTIN PARISH—		
Shell, Unit 1, West Lake Verrett area, 11-14s-12e	*	10,000

*Failures; †Junked; ¶Million cu. ft. gas.

NORTH LOUISIANA

Third test to go beyond 10,000 feet is still drilling.

* * *

Results of Blanchard gas area oil test are disappointment.

Shreveport.—The third test ever to pass the 10,000-foot mark in North Louisiana reached that level and continued drilling last week below 10,128 feet in Union Producing Company's and Standard Oil Company of Louisiana's Brownfield 2, C SW NW 5-19n-5w, Claiborne Parish, Sugar Creek district. This test several weeks ago after reaching 9964 feet was found to be 22 degrees off perpendicular and plugged back to 8800 feet to straighten hole. It is now in lower Marine and while its contemplated depth has not been announced, it is possible it may seek Permian lime, whose depth is estimated between 11,000 and 12,000 feet.

The only other two tests in North Louisiana to pass 10,000 were R. W. Norton's Payne 1, SE SE 27-23n-16w, Caddo Parish, that went to 10,486 feet and plugged back to the Glen Rose gas producing horizon south of the Rodessa fault, and Gulf Refining Company's R. R. Rhymes 15, Section 32-17n-6e, Richland Parish, that went to 10,001 feet and was abandoned. Before discovery of oil at Rodessa in July, 1935, only two North Louisiana tests had gone below the 7000-foot mark.

Announcement was made last week that Hunter & Rowe's E. M. Clarke 1, Section 10-20n-7e, Morehouse Parish, on the southeast end of the Schuler-Buckner 220 mile "trend" play would be deepened 500 feet more to 7500 feet. It has been shut down at 7022 feet after being twice deepened 500 feet below original contract depth of 6000 feet. Identification of Permian lime at 6218 feet has been seriously doubted and most identifications place bottom of hole still in lower Marine.

Magnolia Petroleum Company last week prepared to run 7-inch casing to bottom at 8991 feet in Frank Sexton 1, C SW NE 32-23n-9w, deep test in the shallow Shongaloo field, Webster Parish. Casing will be perforated to test gas showings at 8300, 8370 and 8882 feet. This test, with elevation of 225 feet topped lower Marine at 7605 feet and logged Bodcaw sand that was dry at 8032 feet. The Bodcaw sand is the present producing gas-distillate horizon in the lower Marine at Cotton Valley.

Blanchard Well Disappointing

A. O. Olson and associates' Sharp 1, C NW NE 10-18n-16w, Travis Peak test in the shallow Blanchard gas field, Caddo Parish, proved disappointing when tested again last week showing 38 barrels of 53 gravity oil mixed with distillate and 6½ barrels of salt water daily through ¼-inch choke following perforations with 20 shots from 5994 to 6002 feet and with 15 shots from 6011 to 6021 feet. Total depth is 6065 feet. These operators are obligated to start another test within 30 days on their 800-acre block. Haynes Brothers of Shreveport are part owners of this operation.

The Hunter Company of Shreveport made location for a 6000-foot test to go to Travis Peak in a wildcat area of DeSoto Parish near Logansport, the new operation being Mrs. F. E. Parker 1, 1320 feet north and 600 feet west SEc SW 26-12n-16w. In the same parish, Tom C. Igoe secured a 500-acre lease from State of Louisiana between west boundary of Section 30-12n-16w, and east boundary of Township 11 north, Range 16 west. Igoe already had a block in DeSoto Parish. Singer Manufacturing Company secured from State of Louisiana a lease on 420 acres in Townships 15 and 16 north, Range 11 east, Madison Parish, in which parish it also has a block. Pullman Oil Company has assigned to M. J. Grogan all its holdings in Township 11 north, Range 11 west, DeSoto Parish. This includes the oil well completed last summer in Section 36-11n-11w, in which Grogan had an interest.

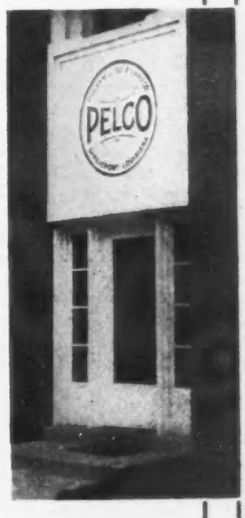
Republic Production Company is assembling a block around Section 1-8n-13w, Sabine Parish, for a proposed 7000-foot test. In Section 10-8n-13w, R. L. Gay, Trustee's Long-Bell 1, several years ago went to 7154 feet. Republic

NORTH LOUISIANA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BOSSIER PARISH (Sligo)—		
Triangle Drlg. Co., Skannal C-2, 13-17n-12w	1000	3120
CADDO PARISH (Pine Island)—		
D.O.K. Oil Corp., player 1, 26-21n-15w	¶10	2255
Magnolia, Dillon Hrs. 24, 23-21n-15w	120	1635
CADDO PARISH (Blanchard)—		
Olson et al, Sharpe 1, 10-18n-16w	38	6065
CLAIBORNE PARISH (Lisbon)—		
Atlantic, English 1, 29-21n-4w	480	5234
Vaughn & Marr, Eppinger B-1, 30-21n-4w	860	5144
DE SOTO PARISH (Bull Bayou)—		
Major Oil Co., Giaque 1, 18-11n-11w	¶4	2780
Yandell Rogers, J. W. Kavanaugh 1, 18-11n-11w	*	3002
WEBSTER PARISH (Cotton Valley)—		
North American Cons. Oil Co., Stewart 1, 32-21n-10w	850	8469

*Failures; †Junked; ¶Million cu. ft. gas.

The Boss Is Always Somewhere Around



Just at this moment you'll probably find the Boss talking with a PELCO customer in our Houma store. Yesterday he might have been in Houston and tomorrow he may be in Greggton or Cotton Valley or New Iberia. The Boss is always somewhere around and the boys are always glad to see him. We've never yet had to send him a cablegram or have him paged in forty-eight states and the District of Columbia. It makes a difference, somehow, and PELCO customers seem to appreciate it.

PELICAN WELL TOOL & SUPPLY CO.

SHREVEPORT LOUISIANA

PELCO

Lake Charles—Houma—Converse
New Iberia—Rodessa—Monroe
Cotton Valley—Greggton
Houston

Natural Gas Company is financing the additional thousand foot deepening of Kirk-Greenway and associates' Whitney Corporation 1, NE NE 8-9n-13w, drilled on the north end of the shallow Converse field several months ago to 8510 feet.

Major Oil Company staked locations for four additional tests last week in Section 12-7n-13w, Zwolle district, Sabine Parish, where it has started one operation. Besides this series two additional tests may be drilled, tentative locations having been run for the latter two.

W. F. Lacey has taken option on 2100 acres around Section 35-7n--14w, Sabine Parish, for a proposed 4000-foot test, this block being 3 miles southeast of Sutton-Zwolle Oil Company and associates' Sabine Lumber Company 1, NW NE 23-7n-14w, that showed 1200 feet of oil in drill-stem test in Washita at 3856 feet but has not been completed despite two acid treatments and is now shut down. If it fails to produce at this level it will be deepened as it is a proposed 10,000-foot test.

Louisiana Seaboard Oil Refining Company (Kilpatrick et al) were fishing last week in Lawrence 1, SW NE 36-12n-14w, DeSoto Parish, after it had an oil showing in the Wolf City formation. It had 80 feet of mud and a show of oil and gas when formation tester was run from 2038 to 2062 feet. Elevation is 332 feet and chalk was topped at 1320 feet.

Just south of the Arkansas line in Union Parish, Sun Oil Company is taking leases around Section 9-23n-2w, on a 10-year basis and northeast of Standard Oil Company of Louisiana's Lockhart block, Gulf Refining Company is buying some protective acreage.

H. B. Schumacher's Mounds Land Company 4, Section 39-11n-12e, Tensas Parish wildcat topped Cockfield at 1025 feet but showed 400 feet of salt water when formation tester was run to 1048 feet.

Allocation of allowables to individual wells under the April order of the Louisiana Conservation Commission for the Lisbon field shows that the per-well allowable runs from 33 barrels daily to 115 barrels daily.

Atlantic Refining Company's English 1, C E½ SE NE 29-21n-4w, in the northeast of the Lisbon field was completed last week flowing 20 barrels of oil per hour through ¾-inch choke without using acid. Tubing pressure was 75 pounds and casing pressure, 550 pounds. Total depth is 5239 feet; elevation is 347 feet. This test cored porosity with excellent saturation from 5225 to 5229 feet and porous lime with fair saturation from 5235 to 5239 feet. Only the week before, W. H. North and associates' T. F. Patton 1, C SW NE 11-20n-5w, completed without acid flowing 20 barrels per hour, had logged saturation from 5325 to 5332 feet, from 5333 to 5337 feet and from 5342 to 5345 feet, a total of 20 feet. It was a mile southwest extension. Elevation is 280.2 feet.

Forbid deepening at Corpus Christi

Austin.—An order making permanent the temporary order forbidding deepening of wells through seven-inch casing in the Corpus Christi area was issued Friday by the Texas Railroad Commission.

ARKANSAS FIELDS

New tests to follow Columbia County success

El Dorado, Ark.—Several new tests are expected to start immediately in the vicinity of Magnolia and Village, Columbia County, Arkansas, as a result of successful completion of Kerr-Lynn Oil Company's Barnett 1, SE SW NE 14-17-20, total depth 7740 feet in Permian lime, after being re-perforated at 7646 to 2649 feet with 9 shots, allowed to flow 666 barrels in 25 hours through testing tool and ⅜-inch choke, and making 1.4 percent basic sediment and water.

The well was not killed but tubing was run without it and the well was brought in flowing 302 barrels of 37 gravity oil in first 24 hours. Standard Oil of Louisiana is buying the oil at a price of $1.28 per barrel and is hauling it by truck to El Dorado.

Short time leases taken in the vicinity of the Kerr-Lynn well, many of them on assignment from the original block for the deepening of the well from contract depth of 6300 feet, will spur early drilling in the area.

Although Standard Oil Company of Louisiana's S. T. Crone 1, C NW SE 8-16-22, Columbia County, Buckner district, made 231 barrels of oil in 24 hours, from 7272 feet in Permian lime, 5000 gallons of acid was used and the well re-completed flowing 58 barrels per hour through ¼-inch choke with tubing pressure 150 pounds, and casing pressure, zero. The gas-oil ratio was 278 to 1. It is Buckner's second oil well.

Two operations in Schuler, Union County, were testing last week, this being Arkansas' most active field. One of the tests is Marine Oil Company's Frances Miller 1, Lot 1, NW 18-18-17, which with elevation of 257 feet topped Jones (lower Marine sand) at 7538 feet and topped Permian (Reynolds) lime at 7649 feet, some porosity with odor and slight stain of oil being recovered near top of the lime. Hole was drilled from 7675 to 7729 feet, electrical log run, casing set and perforated at the Jones sand level.

The other test under way is at Lion Oil Refining Company's Morgan C-2, SW SE SE 18-18-17, with elevation of 22 feet topped Jones sand at 7520 feet, cored to 7586 feet, drilled to 7623 feet, ran casing and perforated at the Jones level.

Continued expansion of the lower Marine horizon at Schuler, Union County, and successful completion of a Permian lime oil well midway between Schuler and Buckner has given new impetus to leasing and geophysical exploration in this southeast-northwest "trend."

Amerada Petroleum Corporation is still keeping a shooting unit in Bradley County in Township 17, Range 10, and in Columbia County, west of Stephens and north of McNeil, Shell Petroleum Corporation kept a seismograph unit. Magnolia Petroleum Company has a shooting unit in Township 19, Range 17, south of the Schuler field, Union County and in the same county Phillips Petroleum Company has a shooting unit in Township 19, Range 16. Standard Oil Company of Louisiana has a shooting unit in the same county in Township 18, Range 15, northeast of the village of Catesville. Tide Water Associated has a shooting unit in Township 17, Range 15, near El Dorado. Kerr-Lynn Oil Company's seismograph unit is working in the neighborhood of the old Champagnolle field, in Township 17, Range 14, and Fohs Oil Company has a seismograph crew in Township 19, Range 13.

Magnolia Petroleum Company last week was leasing in Township 18, Range 14, where there has been much activity recently. In Township 19, Range 15, Union County south of the village of Catesville there has been a heavy leasing campaign that has pushed the price up 300 percent to ten dollars per acre in the last seven weeks. Atlantic Refining Company continues to lease south of Mount Holly.

In the vicinity of the Kerr-Lynn Oil Company's new Permian lime well in Section 14-17-20, Columbia County, royalties sold for a base of $200 to $250 per acre. North of Village, Columbia County, Clarence Taubel and associates leased 78 acres in SW NW and SE SW 33-16-19, and seven miles southwest of Village, Sun Oil Company leased 160 acres in Sections 6 and 7-18-19. Tide Water Associated is still taking scattered leases in the east central part of Township 18, Range 20 and Mid-Continent Petroleum Company and Gulf Refining Company continued to lease north of Waldo and north of McNeil, respectively, all in Columbia County.

Southeast of McNeil around Section 21-16-20, H. M. Moss of Monroe, Louisiana, has secured 2000 acres for a proposed 9000-foot test.

ARKANSAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CLEVELAND COUNTY—		
Marwick & Olds, Vance 1, 18-11-11	*	3550
COLUMBIA COUNTY (Magnolia-Village)—		
Kerr-Lynn Oil Co., Barnett 1, 14-17-20	302	7740
COLUMBIA COUNTY (Buckner)—		
Standard, Crone 1, 8-16-22	914	7272
MILLER COUNTY (Rodessa)—		
Burden & Cummings, Treadway 1, 10-20-28	720	6137
B. B. Orr, Mitchell 1, 10-20-28	1320	6120
Mrs. S. O. Thompson, Concord M. E. Church 1, 10-20-28	960	6147

*Failures; †Junked; ¶Million cu. ft. gas.

El Dorado, Ark.—Six drilling permits were issued last week by the Arkansas Board of Conservation, as follows:

Columbia County (Buckner)—Standard of Louisiana, J. Waters et al 1, 660 feet north and west SEc SE SE 7-16-22.

Miller County (Rodessa) — Isadore Roosth & Texarkana Drilling Company, W. W. Capps 1, 330 feet north and 672 feet west SEc N½ SW NE 10-20-28.

Union County (Schuler) — Phillips Petroleum Company, Marine 4, 330 feet south and 1650 feet east NWc 20-18-17; Marine 5, 330 feet south and 990 feet east NWc 20-18-17; Alice Sidney Oil Company, Powledge 2, 330 feet south and east NWc SW SE 7-18-17; Powledge 3, 330 feet north and east SWc SE SE 7-18-17.

SOUTHEASTERN STATES

Plan two wells in Jackson gas field

Jackson, Miss.—W. S. F. Tatum and associates, owners of a gas line from the Jackson field to Hattiesburg, Mississippi, 90 miles away and which furnishes gas to that municipality, have secured part of the 1320-acre state asylum lease on the north end of the Jackson gas field for the drilling of two tests for gas from the regular Midway chalk producing horizon. Derrick is up for the first test in SWc 26-6n-1e, Hinds County.

Cleve Love and associates' J. J. Newman Lumber Company 2, C SW 9-1s-8w, George County, in which 10-inch casing was set at 1374 feet, top of the Het, drilled a few feet farther and bailed with a showing of salt water and an odor of gas and are repairing rig preparatory to drilling ahead. G. A. Hesse and associates are planning to install heavy rig at Hingen 1, C NE 12-7s-10w, Harrison County, near Biloxi, to deepen to 7000 feet, from present depth of 2700 feet where test has been shut down several months.

The California Company, which has been active for several months in leasing and geophysical exploration in both Louisiana and Mississippi in the Conroe "trend" has been blocking acreage recently in Amite, Franklin and Lawrence counties, South Mississippi. In Amite the company has leased over 8000 acres in Townships 4 and 5 north, Range 5 east. In Franklin and Lincoln counties it secured 32,000 acres in Township 6 north, Ranges 5 and 6 east, besides about 3000 acres in Township 5 north, Range 6 east in Lincoln County. All are 10-year term leases. This company has a gravimeter unit in Townships 7, 8 and 9 north, Range 10 east, Lawrence County and a reflection unit in northeast Pike County.

Georgia's first deep wildcat, Pan American Petroleum & Transport Company's Adams-McCaskill 1 was spudded April 2, just after Georgia's governor, E. D. Rivers, broke a bottle of East Texas crude oil on the drill stem as a christening gesture. The large picture was taken at the Pearce County location. The inset, showing Dr. Robert E. Wilson, president of Pan American, at left, and Governor Rivers at right, also shows in the background at right, Horace Taylor, regular driller on the wildcat. Between the latter two and the rear of them is C. E. Gay, Jr., trustee for Savannah & Atlanta Railway. The wildcat is on a block of 11,000 acres, one of several taken by Pan American in accumulating 277,000 acres in Georgia. The company holds full interest in 17,000 of these acres and 50 percent and operating control in 260,000 acres scatteredd throughout four Georgia counties. The test, 2½ miles from Offerman, has a rig easily capable of drilling to 10,000 feet. Loffland Bros. of Tulsa has the contract.

Illinois

[*Continued from page* 68]

While the Kingwood Company had located Elliot 2, there is only one active test remaining in the Olney area, Pyramid Oil Company's University of Chicago 1, a half-mile east, was spudded last week and at last report was drilling at 500 feet. A dry hole at this point will undoubtedly doom the Olney area indefinitely.

Olney, however, continues as an important company headquarters city. Last week Pure Oil Company, leading major taking part in Illinois development, started construction of a two-story building for its State Production Division offices. It is located on a sixteen-acre tract purchased by the company last fall, and on which a motor transportation department building has already been erected. Wabash Pipe Line Company, recently organized Pure subsidiary, will also maintain offices in the new structure.

Spudded almost two years ago, Albachtin and Sims H. Nichols 1, Section 12-4n-4e, Meacham Township, northeastern Marion County, last week was abandoned at 2909 feet. The wildcat changed ownership several times during the period, and passed through two saturations. When the deepest saturation was found incapable of commercial production, it was plugged back and given acid treatment at the higher level. While some oil showed, it was drowned out by salt water.

Near Plainview, Macoupin County, 40 miles northeast of St. Louis, American Petroleum Corporation's Snedeker Brothers 1 struck a 3,000,000 cubic foot gas flow at 400 feet. Operators are undecided whether to attempt to market the gas.

In the Noble area of Richland County, Pure Oil Company completed another well on the Montgomery B farm, No. 4, but it was not as good as No. 5, which, when completed two weeks ago, broke the Richland County production record with an initial of 2421 barrels daily. No. 4 yielded 1635 barrels during the first 24-hour period. A better well was Pure Oil Company's Elizabeth Pflaum 1, Section 5-3n-9e, west of the Montgomery lease, which started Monday at 87 barrels an hour and produced approximately 2000 barrels the first day.

A test that may assist in defining the North Noble field is American Exploration Company's Johnson 1, Section 29-4n-9e, Denver Township, spudded in last week. It is a mile north and slightly west of present production.

In Wayne County, Benedum-Trees Oil Company was coring for the McClosky at its Gloyd test. West of its Knapp well in the Rinard area, Pure Oil Company was drilling on the C. B. Clay farm in the Cisne field.

In Jasper County, in the eastern section of the Basin area, Shell Petroleum Corporation completed four months of seismographic survey work and transferred the crew to Princeton, Gibson County, Indiana.

Two areas in Fayette County—the Beecher City field in the extreme northeast section of the county and the St. Elmo pool—will see considerable activity this year. Carter Oil Company, which has four producers in the St. Elmo area, has announced five additional locations for early drilling. Production is from the shallow Benoist sand, found at approximately 1500 feet. Carter Oil Company is also proceeding with orderly development of the Dix field of Jefferson County, where it has two producers, two tests drilling and two locations staked.

Continental Oil Company has started its first basin test on the Hentzen tract, Section 29-2n-2w, two miles southeast of Carlyle, Clinton County. The company has taken over a large block of leases gathered by Harry Neelly of San Antonio, Texas.

Amerada Petroleum Corporation will drill its first Illinois test—Pyramid Coal Company 1 on section 10-6s-3w, on the Pinckneyville anticline, Perry County. Basin headquarters will be established at Centralia.

Another "gusher" completed in pool near Bradford

Pittsburgh.—Niagara Oil Company, discoverer of the Silverville pool, 9 miles south of Bradford, Pennsylvania, 7 months ago, drilled in its fourth flowing well last week, 500 feet from previous producers drilled by this company. It does not extend the field. The Stray sand was topped at 1532 feet and showed an estimated 700 barrels initial daily production when drilled 3 feet in. It is to be carried through the sand, which is expected to be about 12 feet thick.

Minard Run Oil Company has drilled 3 producers in this field, and Becker and Williams 1. Limits of the pool have not been entirely defined, although several dry holes have been completed in the area.

New York State Natural Gas Company's S. H. English wildcat, Van Etten Township, Schuyler County, on the New York side of the New York-Pennsylvania deep sand gas region, found the Oriskany dry between 3223 and 3292 feet. The well will be carried down for a test of the Medina.

In the new Woodhull Township field of Steuben County, New York, salt water was encountered 25 feet in the Onondaga, topped at 3840 on New York State Natural Gas Company's Lyle Wheatcraft. Deepest of the current operations in this area, it was bailing as the week closed.

In the Oriskany area of Kanawha County, West Virginia, Godfrey Cabot, Inc., recovered lost tools on G. G. Dawson 1, and when deepened slightly it came in for 1,000,000 cubic feet. On Monday, it gauged 14,000,000 cubic feet, but the pressure was too great and the line exploded, fracturing the leg of W. P. Smith, 40, driller.

In Pickett County, Tennessee, W. R. Jackson was cleaning out a well on the Phillips farm east of Lyllydale preparatory to a pumping test of the St. Peter sandstone from 1384 to 1484 feet. This area was revived last fall by J. H. Overstreet's Cordell Hull 1, on the homestead of President Roosevelt's secretary of state. It is nine miles north of Celina, near the Junction of the Obey and Cumberland rivers, Clay County, and has already yielded over 4000 barrels of oil from pay between 447 and 501 feet. The play this summer will extend through the northern Tennessee counties of Clay, Jackson, Overton, Pickett and Fetress.

EASTERN FIELDS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
OHIO		
ATHENS COUNTY—		
Gibbs Farm O&G Co., Wingett 1...	1	1186
CUYAHOGA COUNTY—		
Rock Ridge Dev. Co., Belt Terminal 1	¶.25	1062
GUERNSEY COUNTY—		
Geo. Kernodle, Gunn 1.....	¶.04	1096
KNOX COUNTY—		
Pure, Miller 1.....	12	3140
LORAIN COUNTY—		
Wm. Dempsey, Lyons 2.....	*	2440
MEIGS COUNTY—		
Proffitt et al, Autherson 1.....	¶.08	2030
MONROE COUNTY—		
Roy Early, Hill 1.....	50	1273
MORGAN COUNTY—		
Morris et al, Tuttle 8.....	2	435
Penn Const. Co., Dawson 4.....	¶.30	1590
NOBLE COUNTY—		
Geo. Woodford, Woodford 5.....	*	770
WASHINGTON COUNTY—		
McCall Drilling Co., Price 1.....	50	828
Bay & Weppler, Lauer 9.....	4	276
David Ripley, Lauer 5.....	2	256
Harris et al, Clift 2.....	*	3000
Knob Oil Co., Ashur.....	*	1680
WEST VIRGINIA		
BOONE COUNTY—		
Pond Fork O&G Co., Fee 1.....	¶.13	2020
GILMER COUNTY—		
P. D. Phillips, Fetty 3.....	¶.25	2070
Pittsburgh & W. Va. Gas Co., Floyd 7620	*	1765
Big Run Gas Co., Bonnett 1.....	*	1695
KANAWHA COUNTY—		
United F. G. Co., Johnson 4785...	¶11.16	5100
Owens-Illinois, Silver Coal 5.....	¶1.38	3292
RITCHIE COUNTY—		
Kelly et al, Kelly 3.....	*	1740
ROANE COUNTY—		
Hope Natural Gas Co., Howell 7804.	*	2556
WIRT COUNTY—		
S. W. Douglass, Tucker 2.....	*	722
KENTUCKY		
DAVIESS COUNTY—		
Gibson et al, Taylor 2.....	25	1070
FLOYD COUNTY—		
Kentucky-W. Va. Gas Co., Dillion 568	¶2.43	1406
HANCOCK COUNTY—		
Cumberland Pet. Co., Dunleavy 1..	*	710
LEE COUNTY—		
South Penn, Flahaven Land Co. 105.	20	1122
McLEAN COUNTY—		
J. C. Miller, Foley 9.....	80	1122
MARTIN COUNTY—		
Hale et al, Hardin 1.....	¶.10	2803
OHIO COUNTY—		
Teller et al, Medcalf 3.....	12	610
Scholl et al, Farmer 4.....	*	700
POWELL COUNTY—		
South Penn, Adams & Lambertson 12	2	....
TODD COUNTY—		
A. Polhamus, Hall 1.....	*	808
PENNSYLVANIA		
FAYETTE COUNTY—		
Potter Dev. Corp. et al, Summit Hotel 2	¶3.50	6768
GREENE COUNTY—		
W. L. Walters, Clutter 1.....	¶2	1717
WASHINGTON COUNTY—		
Keystone Drilling Co., Balentine 1..	¶.49	1550

*Failures; †Junked; ¶Million cu. ft. gas.

CALIFORNIA FIELDS

World's deepest hole will be tested at two higher zones.

* * *

Fresno County wildcat reports favorable sand conditions.

* * *

Long Beach yielding five percent of state's total output.

Los Angeles.—While Continental Oil Company the past week made plans for making a production test in KCL A-2 near Wasco, Kern County, interest in wildcat operations shifted to Petroleum Securities Company's Gatchell 2 project that is endeavoring to find production approximately three miles south of the Coalinga field, Fresno County. Financed by "dry hole" money put up by Seaboard Oil Corporation, Honolulu Consolidated Oil Corporation and Tide Water Associated Oil Company, the venture is reported to have cored some 800 feet of favorable formation down to 7000 feet, the last 80 feet being highly saturated. While not the first wildcat to be drilled in the Guijarral area, the fact that the Gatchell well has found something of interest may bring about a gradual renewal of activities near Coalinga. In fact, much of the leasing work done in recent months in the San Joaquin Valley has been in the neighborhood of Coalinga, large blocks having been acquired by major companies.

Two separate zones will be subjected to a thorough production test in the KCL A-2 wildcat, 3½ miles west of Wasco, Kern County, possibly Friday, Saturday and Sunday, by Continental Oil Company.

A 2898-foot string of 4½-inch liner has been cemented and hung from the bottom of the 7-inch casing at 11,573 feet, this string extending to approximately 14,461 feet. A perforated plug was landed at bottom of the liner as there is a strip of shale, possibly 600 feet of it, that is not considered sufficiently interesting to figure in the production test.

A blank space in the liner will be perforated to permit a production test to be made around 13,175 feet up to 13,092 feet. When this is completed another test will be made to include the horizon from 14,049 feet to 14,315 feet, where additional showings of oil and gas were reported. A water shutoff test was made Thursday below the 7-inch casing, and apparently nothing stood in the way of the company's efforts to bring in a well, providing it has plenty of oil sand and gas.

The fact that only 20 percent of the formation below 11,000 was cored gives little information as to its chances to produce. The company admits that showings in the ditch were interesting and that oil sand in the fractures may be important.

Drilling Has Been Cheap

Apparently, the decision to set liner at 11,573 feet is a move toward economy. No casing will be landed from that depth to bottom. The company spent about $275,000 to reach present depth. Less than 10 years ago, Kettleman Hills operators spent twice as much to place a well on production, but that cost has since been cut to less than $200,000 per well due to alvancement in methods of operating.

Twenty-four wells finished in the Terminal zone of the Long Beach harbor field produced in excess of 1,000,000 barrels during February, accounting for 5 percent of the state's output. New wells just completed in the Wilmington-Long Beach field resulted in substantial increases for the field as a

CALIFORNIA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
WILMINGTON—		
Bankline, U. P. (LB) 3	2909	3895
General Petroleum, Harbor Comm. (LB) 15	240	3890
Hancock, Harbor (LB) 15	4032	4047
Termo, LB HD (LB) 2	3828	3895
Union Pacific, U. P. (LB) 50	214	2950
SANTA MARIA VALLEY—		
Pacific Western, Samarin 3	2287	4904
Petroleum Equities, Weber 1	701	4320
Petroleum Securities, Carey 1	700	5323
Signal Oil, Ramalho 3	4200	4849
EL SEGUNDO—		
Sovereign, El Segundo 1	975	7355
LONG BEACH—		
Chester F. Yunker, Barbara 2	100	3470
TORRANCE—		
Lakeside, Torrance 2	147	4998
W. E. McCaslin, Hutchins 2	180	5015
LOST HILLS—		
Standard, United 7	32	1553
The Texas Co., Theta 11-13	50	1147
Tide Water Assoc., Williamson 10B	31	1611
RIO BRAVO—		
Superior, Geissinger 1	740	11,288
RIO VISTA—		
Amerada, E. D. Mayhood 1 (shut in, no flow test)	*	4345
MOUNT POSO—		
W. P. W., Packard 1	*	1362
ROUND MOUNTAIN—		
Harry Long, Willis 2	*	2114
Shell, Olcese 5-1	*	2025

*Failures; †Junked; ¶Million cu. ft. gas.

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whole during the past few days. Bankline Oil Company's UP 2, the field's largest producer, has yielded upwards of 200,000 barrels of oil in 30 days, while General Petroleum Corporation's Harbor Community 6 was second with a production of 150,000 barrels in 28 days.

The Santa Maria Valley field with 93 producing wells has built up a production peak of 120,372 barrels per day. Ten new wells were brought in during March with a combined daily potential of 13,595 barrels. Petroleum Securities Company's Garey 1, a recent completion, established a potential of 830 barrels daily, and Webber 1 of Petroleum Equities, Inc., rated 555 barrels daily. Despite the allowable of 10,000 barrels daily given the field, increased drilling activity is noted.

Superior Oil Company completed Geissinger 1, Section 35-28-25, in the Rio Bravo field, Kern County, for approximately 800 barrels of oil per day from 11,288 feet.

More than casual interest is indicated in a wildcat test announced for the San Fernando Valley by Tide Water Associated Oil Company to go down in NE 27-3n-16w, Los Angeles County. This undertaking will be drilled on top of the so-called Aliso Dome, and near an old well drilled some years ago by L. C. Brand which developed production on a pumping test. It explored to 2900 feet but Tide Water Associated expects to make a more thorough test. The company controls approximately 1000 acres. Because of the need of constructing three miles of road to well site the company is not slated to start actual drilling operations for at least 45 days.

The Chanac zone is believed to have been found in Union Oil Company's Berry 1, Section 15-31-29, at Arvin, Kern County. From 5960 to 6000 feet, streaks of oil sand and shale were cored, and when a formation tester was run the recovery was oily gas-cut mud without water. The well now is coring with a possibility that the Santa Margarita horizon will be tapped.

Another test will be drilled at East Ten Section, Kern County, by Standard Oil Company. Location has been staked in the SE 27-30-26, and is in the same area where KCL 15-1 was completed for 400 barrels of 28 gravity oil per day at 8410 feet.

Universal Consolidated Oil Company's Universal-Trust 2 in the Rosecrans field has been brought in for an estimated yield of 1300 barrels of 35 gravity oil per day at 7601 feet.

Richfield Oil Company has spudded in an important deep test, KCL-1, Section 28-11-20, at Wheeler Ridge, at the southern tip of the San Joaquin Valley. No drilling has been done in that area for several years.

Coast Exploration Company will check production of a new oil sand found in the Walker formation below the Vedder in Coffee Canyon where a production test developed some oil and water from 1906-1982 feet. Small amounts of water came from bottom. A plug was placed at approximately 1968 feet from which depth the new pumping test will be made.

The freak gas sand struck in The Texas Company's Theta 2-23, Section 2-26-20, at Lost Hills, proved to be a pocket which was quickly exhausted. The well is being abandoned after drilling to 1842 feet.

Independent Drilling Company is building a derrick for Harwood 1 on a small lease between the Burma and Kelly leases in the Yorba Linda field. Burma Oil Company has picked up the shallow oil zone in the field northwest of Yorba Linda at 2190 feet.

While it is yet too early to know what the prospects are for Petroleum Securities Company's Gatchell 2, south of Coalinga, Fresno County, consistent reports are that an interesting oil sand zone was encountered short of 6900 feet, which is expected to be tested soon. This zone, 90 to 150 feet in depth, is thought to have tapped the Avenal, or Eocene formation, which also was found in Ed McAdams' deep test a mile northwest of Kettleman Hills North Dome, but which failed to be completed due to mechanical difficulties at a depth below 11,000 feet. The fact that the Avenal has been picked up, scouts say, indicates that the west and east side fields of the San Joaquin Valley overlie the same horizon, and they anticipate a lively leasing program by major oil companies to tie up available parcels.

Petroleum Securities Company's well is situated on the west edge of the San Joaquin Valley and is an anticlinal test. Should it be commercially productive, it would prove up an area larger than Kettleman Hills, and bring to a head the wildcat campaign that has been carried on since its discovery in 1928 to find a deeper productive zone. Shell Oil Company drilled a well below 10,000 feet at the northeast end of Kettleman Hills North Dome that picked up the Avenal, but it was too far off structure to furnish much information.

Petroleum Securities Company officials have designated Gatchell 2 as a "no dope" hole. The company controls a large block of acreage.

Lakeview Flusher 1, North of Maricopa, Kern County, has been abandoned for the third time since its original completion more than 20 years ago by Union Oil Company. This project came in for 60,000 barrels daily and spread a thick layer of heavy-gravity crude over the surrounding land for miles. Sidetracked and redrilled twice, this famous gusher has finally been abandoned by Hallmark Oil Company, last owner, which took it over to see if it could be developed into a substantial producer from an upper zone.

New California Standard tanker put in service

The Standard Oil Company of California's new tanker, H. D. Collier, arrived at San Pedro recently, completing its maiden voyage from New York, begun March 4. This tanker, which represents an investment of $2,000,000, is the last word in equipment, efficiency, and accommodation for its personnel. It will be used largely in service between California and east coast of the United States and between California and the Pacific northwest. San Francisco will be its home port.

Wyoming federal lease sale May 16

Washington, D. C.—Sale by auction, at Cheyenne, Wyo., May 16, of oil and gas leases on approximately 120 acres of public land in the Lance Creek field, Niobrara County, was announced by the Interior Department April 4.

The land, to be awarded to the bidder of the highest bonus per acre, will be offered in three units of approximately 40 acres each.

"Decision to offer the tracts of land in the Lance Creek field for leasing is in line with the established policy of the department to protect the nation's petroleum supplies from drainage by private concerns," it was explained.

"While portions of the field, designated by the Geological Survey in 1930 and revised in 1936, have been under development for some time through government leases to private operators, commercial discovery of new oil sands in the Minnelusa formation threatens possibility of drainage without return to the government of royalty payments."

Gas found near Henderson, Kentucky

Henderson, Ky.—A test on the C. T. Blackwell farm, in the northeast part of Henderson County, Kentucky, has encountered 500,000 cubic feet of gas in the Jones sand at 1538 feet. It is reported that drilling is to be continued, as soon as the gas is cased off.

It is understood Magnolia Petroleum Company is planning a deep test on Spottsville Dome, in eastern Henderson County. Checking of titles is almost completed, and a geophysical crew is expected to commence work shortly. It is anticipated drilling will be started within another 90 days.

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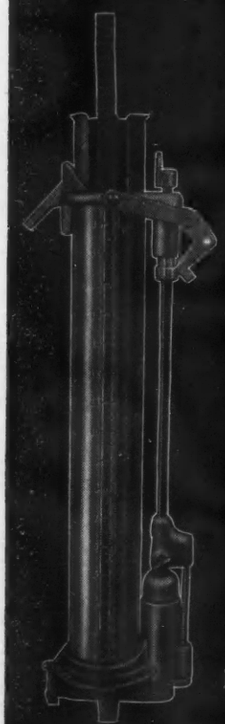

IMPORTANT WILDCAT TESTS

ALABAMA

BARBOUR COUNTY—H. A. Stebbinger's Town of Lewis 1, 11-9n-25e, lcn.

CHOCTAW COUNTY—Joe Modisett et al's McCorvey 1, se sw sw 20-9n-2w, temp abn 7520 ft.

CLARKE COUNTY—Greer et al's Augustine Meaher 1, se nw 9-7n-1e, spd.

HOUSTON COUNTY — Rice O&G Co.'s Oakley Est. 2, nw sw 9-3n-29e, co to deepen 4975 ft.

MOBILE COUNTY—J. C. Prine's King 2, 4-1n-4w, sd 1100 ft. Grand Bayou O&G Co.'s J. A. Stafford 1, sw sw 24-7s-3w, rur.

ARKANSAS

BRADLEY COUNTY—Phillips Pet. Co.'s Marsden 1, ne sw 9-16-11, spd, dr 730 ft.

CALHOUN COUNTY — J. R. Lockhart's Hearnesberger 1, 16-11-13, woc surf csg.

CLAY COUNTY—Canadian American Oil Co.'s Smith 1, c ne nw 9-20-8, elev 375 ft, top Nacatosh 800 ft, sd 1005 ft shale.

CLEVELAND COUNTY—Marwick & Olds' Aubrey Vance 1, nw nw 18-11-11, elev 241 ft, Nacatosh 2809-63 ft, dry abn td 2901 ft.

COLUMBIA COUNTY — L. A. Longino's Baker 1, se nw nw 13-17-20, mim. E. O. Olds' Mary Dennis 1, nw se sw 4-17-21, owdd, td 4513 ft. Standard of La.'s W. P. Phillips 1, 15-17-19, showed 105 ft mud, oil and sg, drill stem test 4616-50 ft (Travis Peak), showed sw 5320-36 ft, dr 5948 ft; Warren 1, nw nw 17-16-22, lcn; Waters 1, c se se 7-16-22, spd dr 1230 ft; Crone 2, se sw 8-16-22, dk; McKean 2, nw sw 8-16-22, mim.

DESHA COUNTY—Columbian Fuel Corp.'s Victoria Cross 1, sw sw 34-8s-3w, dr 1800 ft.

HEMPSTEAD COUNTY—Easton, May & Murdock's R. M. LaGrone 1, ne ne 5-12-26, sdtr 2755 ft, old td 2944 ft.

JOHNSON COUNTY—Ark. La. Gas Co.'s Hudson 2, se nw 14-10-24, mim.

LINCOLN COUNTY — Fitzwater, Inc.'s Bowens 1, nw sw ne 26-9-6, sd 1130 ft.

LITTLE RIVER COUNTY—Henan & Coe's W. D. Waldrop 1, sd 1960 ft. J. G. Strahan et al's Dierks Lbr. Co. 1, sw se 21-12-28, sd 2320 ft.

LONOKE COUNTY—J. W. Eddington et al's Anderson 1, nw ne 7-4-9, woc 12-inch csg 85 ft.

MILLER COUNTY—F. F. Earles' General American 1, se sw 20-14-26, mim.

UNION COUNTY—E. G. Bradham's S. L. Robbins 1, sw ne 12-19-16, elev 214 ft, sd 2300 ft. Joe Modisett et al's Frost Lbr. Co. 1 (Union Sawmill fee), ne ne 8-18-12, mim.

CALIFORNIA

LOS ANGELES COUNTY

BELLFLOWER—George L. Clayton's Scott 1, 32-3-12, dr hard shale 6585 ft.

CASTAIC—Royal Land's No. 1, 8-4-17, dr hard shale 427 ft.

LOMITA—Sebastian Kramer's No. 1, 25-4-14, rigging up.

NEWHALL—National Petroleum's No. 1, 27-4-16, dr hard conglomerate 2031 ft.

PICO—British American's Pico 1, 12-2-12, rigging up to deepen, 3990 ft. A. S. Johnston's No. 32, 5-2-11, dr hard shale 4573 ft.

SAN FERNANDO—Tide Water Associated's Porter 1, 27-3-16, loc.

TOWSLEY CANYON — Towsley Canyon's Hammon 1, 8-3-16, co 4100 ft.

WEST LONG BEACH—Pioneer Petrol's Irvine 1, 26-4-13, dr sandy shale 1839 ft.

WHITTIER—Colorado's No. 19, 22-2-11, loc. Fullerton's Whittier 5, 25-2-11, dr sand and shale 1705 ft. George W. Langstaff's Iliff 1, 8-2-11, small rig.

ORANGE COUNTY

KRAEMER—Congress' Kraemer 1, 36-3-9, dr hard sandy shale 2989 ft.

SAN BERNARDINO COUNTY

CHINO—Southern Counties' Los Serranos 1, 22-2-8, rig.

FRESNO COUNTY

CLOVIS—Central Valley's No. 1, 1-12-20, dr sand and shale 588 ft.

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL WEEKLY.

*—*dry hole abandoned well.*
‡—*salt water (completions).*
†—*junked and abandoned.*
¶—*million feet of gas.*
abd—*abandoned.*
bbls—*barrels.*
br—*building rig.*
bs—*basic sediment.*
csg—*casing.*
co—*cleaning out.*
dd—*drilling deeper.*
dk—*derrick.*
dr—*drilling.*
fsg—*fishing.*
ft—*feet*
hfw—*hole full of water.*
in—*inches.*
lcn—*location.*
m—*milling.*
mim—*moving in materials.*
mit—*moving in tools.*
mot—*milling on tools.*
n, s, e, w—*north, south, east, west.*
oih—*oil in hole.*
owdd—*old well drilling deeper.*
owpb—*old well plugging back.*
pb—*plugged back or plugging back.*
r—*reaming.*
rog—*rig on the ground.*
rur—*rigging up rotary tools.*
rust—*rigging up standard tools.*
sd—*shut down.*
sdtr—*sidetracking.*
sg—*show gas.*
si—*shut in.*
so—*show oil.*
so&g—*show oil and gas.*
spd—*spudding.*
sr—*straight reaming.*
sw—*salt water.*
td—*total depth.*
ur—*underreaming.*
wih—*water in the hole.*
wo—*workover.*
wocs—*waiting on cement to set.*
wosr—*waiting on standard rig.*

COALINGA—J. M. Conlon's No. 1, 25-19-14, sd 100 ft. Petroleum Securities' Gatchell 2, 18-20-16, (information refused), dr 6850 ft. Shell's 36-1, 36-19-14, rig. Shell's Conlon 1, 30-19-15, sd 3160 ft. Shell's No. 1-1, 35-2014, dr sand and shale 1287 ft.

EAST COALINGA—Pure's SPL Co. 1, 31 18-17, fsg drill pipe 10,861 ft.

JACALITOS HILLS—Jacalitos Petroleum's No. 1, 14-21-15, sd 5743 ft.

PANOCHE HILLS—Panoche Hills' No. 1, 12-14-11, fsg drill pipe 635 ft.

KERN COUNTY

ARVIN—General Petroleum's Pauley 1, 22-31-29, sd 500 ft. Petrex, Inc., Petrex 1, 32-31-30, rigging to deepen 3635 ft. Union's Berry 1, 15-31-29, dr sandy shale and sand 6097 ft.

BELRIDGE—General Petroleum's St. Helens 1, 12-28-20, fsg drill pipe 8683 ft. Ohio's Ford 1, 6-29-22, dr shale and sand 4466 ft. Shell's Voight 1-1, 32-27-20, dr shale and sand 4100 ft.

BUENA VISTA LAKE—Ohio's KCL A8, 32-31-26, dr hard shale 9179 ft.

DEVILS DEN—Amerada's Beer 5, 22-26-19, dr sandy shale and gray sand 7496 ft. Gibson's Alferitz 3, 14-25-18, dr shale 174 ft. H. L. F. Oil Co.'s No. 1, 25-25-18, sd 88 ft.

DOMINION—George W. Dean's Dean 1, 26-26-28, rig.

EDISON—British Cons.' No. 1, 11-30-30, sd 50 ft. Ray W. Steven's No. 1, 22-30-30, rig. Wood-Callahan's Porter 1, 20-30-29, dr sand and shale 4187 ft.

FRUITVALE—Shell's KCL A-58, 29-29-27, abd 7214 ft.

GRAPEVINE-WHEELER RIDGE — Richfield's KCL 1, 28-11-20, dr hard sand and shale 1197 ft. Universal's No. 1, 33-11-19, co 4988 ft.

GREELEY—Shell's KCL 1B-76, 16-29-26, dr sand and shale 7077 ft.

LERDO—Standard's KCL 18-1, 29-28-26, dr shale 6699 ft.

McFARLAND — Tide Water Associated's Pond 1, 17-26-25, loc.

McVAN—Bargol's Bargol 2, 11-27-27, sd 1245 ft. Desert Glow's No. 3, 14-27-27, rig. Framac's Brown 3, 22-27-27, csg 1351 ft.

POSO CREEK—Harkness & Laws' Hunt 1, 28-27-27, foundation. Reynolds' No. 1, 30-27-27, dr sand 310 ft.

RICHGROVE—Amerada's No. 1, 2-25-27, dr sand and shale 364 ft. Dilamar's Quinn 1, 15-25-27, bailing water and some oil 2956 ft.

SAN EMIDIO—Shell's KCL 1-A, 26-11-22, fsg drill pipe 7987 ft.

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STRAND—Continental's KCL E-1, 17-30-26, spd, drilling ahead.

TEMBLOR HILLS—Chico Martinez' Exeter 1, 1-29-20, running liner 1065 ft. Chico's No. 2, 1-29-20, rig.

WASCO-SEMITROPIC—Continental's KCL A-2, 8-27-24, to run liner 11,573 ft, td 15,004 ft. Standard's Randolph 2, 14-27-23, on gas lift, td 9535 ft.

KINGS COUNTY

PYRAMID HILLS—Pyramid Production's Retherford 1, 27-24-18, sd 3090 ft.

SANTA BARBARA COUNTY

CARPINTERIA—Carpinteria's No. 1, 32-4-25, dr brown shale 2049 ft.

CASMALIA-CAT CANYON — Standard's Los Flores 1, 27-9-33, redrilling 4565 ft. Southern California Drilling Co.'s Houk 1, 9-9-33, preparing for test, td 5002 ft.

CUYAMA—Claude Fisher's No. 1, 28-11-28, sd broken shale 1264 ft.

GAREY—Valoco's Haslam 1, 28-10-33, dr sand and shale 1049 ft.

GAVIOTA—Gaviota's Hollister 1, 35-5-33, sd 3205 ft. Wilshire's Hollister 1, 35-5-33, fsg drill pipe 2875 ft.

GATO RIDGE—O. C. Field's Continental 3, 9-8-32, grading loc. Moyle Petroleum's No. 1, 4-8-32, shut in 3795 ft.

LOS OLIVOS—United Western's Bradley 1, 15-7-30, dr brown shale 2894 ft.

ORCUTT—Bankline's Silva 1, 7-9-33, rigging up.

PURISIMA—Alphonso Bell's No. 4, 33-8-34, pumping, td 3180 ft.

SUMMERLAND—Gauthier's No. 17-1, 22-4-26, sd 1400 ft.

SAN LUIS OBISPO COUNTY

EDNA—Loma Grande's Luis 1, 28-31-13, rig.

VENTURA COUNTY.

CAMARILLO—The Texas Co.'s Edwards 1, 19-2-21, fsh drill pipe 4407 ft, td 6111 ft.

OXNARD—Walter G. Rowe's L. Johnson 1, 15-1-22, redrilled 2700 ft, td 4115 ft.

SESPE—Continental's Elkins 1, 23-4-19, rigging up. Claran's Hardison 1, 22-4-20, rigging up. Garmack's Orcutt 1, 28-5-19, sd 565 ft. Garmack's Crosby 1, 14-4-19, grade. La Salle & Van Dissen's No. 1, 17-5-19, grade. Merchant's Cochrane 8, 1-4-20, running 15-in csg, red sand and shale, 86 ft. Sespe Petroleum's No. 1, 1-4-20, sd 2650 ft. Speik's Speik 1, 33-5-19, rig pump 3440 ft.

SIMI—Germanina Truccano's No. 1, 5-2-17, fsg cable tools 1005 ft.

SOUTH MOUNTAIN—Clipper's Schieferle 1, 17-3-20, material and cellar. The Texas Co.'s Yale Richardson 5, 13-3-21, dr hard sand showing oil 3348 ft.

FLORIDA

LEVY COUNTY—Fla. Oil Discovery Co.'s Sholtz 2, sw sw ne 9-15s-13e, sd 2620 ft.

NASSAU COUNTY—St. Mary's River Oil Corp.'s Hilliard Turpentine Co. 1, nw nw se 19-4n-24e, elev 110 ft, cemtd 6⅝ in csg 3935 ft to shut off water, sr 3992 ft hd shale strks lime.

POLK COUNTY—Edw. A. Hill, Tr.'s Polk County Lbr. Co. 1, nw nw ne 32-25s-25e, dk.

SUWANEE COUNTY—Wm. G. Blanchard's Lucy Cotton 1, se ne 35-3s-11e, sd for heavier rig, 200 ft.

KANSAS

BARBER COUNTY—Palmer's Warwick 1, c nw 29-21s-10w, rust at 4787 ft. Carter & Wentz's Lytle 1, c ne nw 6-32s-14w, td 4980 ft, abd.

BARTON COUNTY—Price's Hammeke 1, ne ne sw 12-18s-12w, pb to 3429 ft, testing. Shell's Ehrlich 1, sw sw sw 1-16s-14w, dd to 3296 ft, 2800 ft oih. Day's Feltes 1, se se ne 14-16s-12w, sd 1875 ft. Murfin's Rexroot 1, nw nw se 14-17s-13w, dr 1895 ft. Crown Pet.'s Schartz 1, sw se nw 7-20s-11w, set 7-in csg 3346 ft, woc. Price's Wondra 1, nw nw ne 10-17s-13w, ur 8-in csg 2485 ft. Sinclair Prairie's Frederick 1, sw sw se 16-16s-11w, set 5-in csg 3322 ft, woc. Silverstein & Geroge's Otte 1, se se nw 2-19s-14w, ru. Gear & Atlantic's Sullivan 1, ne se sw 29-17s-13w, dr 3200 ft. Byers' Weathers 1, sw sw ne 35-20s-14w, lcn. Lario's Hulme 1, c el ne 21-20s-12w, lcn.

BUTLER COUNTY—Dustin's Miley 1, se nw ne 17-27s-5e, co 800 ft. Saco, Kansas & Gulf's Pettit 1, sw nw sw 21-28s-6e, dr 1975 ft.

CHASE COUNTY—Duffy's Leedy 1, ne nw nw 26-22s-9e, dr 1650 ft.

COWLEY COUNTY—Brewer's McDaniels 1, sw sw sw 24-30s-4e, dr 2315 ft. Wakefield's White 1, nw nw ne 4-33s-4e, dr 2730 ft. Bess & Gralapp's Hunt 1, c nl ne nw 18-34s-5e, dr 1618 ft. Smith's Wilson 1, se sw nw 9-33s-6e, td 800 ft, skid rig. Palmer's Houser 1, se nw sw 13-30s-3e, dr 300 ft.

DICKINSON COUNTY—Franks' Huffman 1, nw nw sw 11-13s-1e, rig.

EDWARDS COUNTY—Douglas & Gear's Meade 1, se se nw 35-25s-16w, sdo.

ELLIS COUNTY—Skiles' Jensen 1, sw se ne 26-12s-18w, sd 2910 ft. Duwe & Farris' Hadley 1, se ne se 12-11s-18w, sdo 3146½ ft. Bradley's Jensen 1, nw nw se 36-11s-19w, sho sulph wtr. Continental's Baumrucker 1, ne ne sw 25-14s-16w, dr 3030 ft. Helmerich & Payne's Stebbins 1, nw nw se 7-13s-20w, dr 3598 ft. Twin Drlg.'s Hall 1, nw sw ne 1-12s-17w, td 3621 ft, abd. Hays & Sackrider's Windholtz 1, ne ne ne 2-13s-16w, td 3242 ft, sdo. Western Kansas' Cole 1, ne se se 24-11s-20w, dr 3400 ft. Carter's Foster 1, se se nw 1-15s-16w, rust 3447 ft. Hays & Sackrider's Dreher 1, ne ne ne 35-12s-16w, cel.

ELLSWORTH COUNTY — Wixon's Peterman 1, sw sw sw 28-17s-10w, td 3306 ft, testing.

FORD COUNTY—Sinclair Prairie's Young 1, c sl ne 34-27s-21w, woc 313 ft.

GRAHAM COUNTY—Continental & Cities Service's Morel 1, c w½ e½ ne 15-9s-21w, td 3718 ft, 2800 ft oih, 17 hrs.

GRAY COUNTY—Reynolds' Watkins 1, c sw 32-28s-28w, rot rig.

GREENWOOD COUNTY—Whittaker & Johnson's Cannon 1, c el se nw 8-26s-13e, rng 5-in csg. Whittaker's Bressner 1, nw nw se 8-26s-13e, sd 750 ft.

HARPER COUNTY—Franklin Drlg.'s Walts 1, ne ne sw 24-34s-6w, dr 4995 ft.

JACKSON COUNTY—Lemmick Oil's Marble Savings Bank 1, c ne ne 26-9s-14e, dr 900 ft.

KEARNEY COUNTY—Tri-County's Thornbrough 1, ne se ne 19-25s-35w, mim.

LANE COUNTY—Phillips Pet.'s Kees 1, c se se 3-19s-30w, sdo 4911 ft.

McPHERSON COUNTY — Phillips Pet.'s Galle 1, nw nw ne 11-21s-2w, dr 3275 ft. Darrah-Aurell's Decker 1, sw sw se 12-21s-2w, dr 3344 ft.

MEADE COUNTY—Pacific-Midwest's Rexford 1, ne se sw 8-30s-29w, sd 200 ft. Barnett's Adams 1, sw sw ne 22-34s-30w, sd 69 ft. Bryan & West's Brown 1, ne ne sw 5-33s-27w, spd & sd.

NESS COUNTY—Jones & Lane's Page Milling Co. 1, se se nw 36-18s-26w, sd 3270 ft. Marshall's Anderson 1, sw sw nw 23-16s-24w, spd & abd. Trojan's Mose 1, c sw nw 10-18s-25w, sd 500 ft.

OTTAWA COUNTY—Babcock's Copeman 1, c nw ne 18-10s-2w, pits.

PRATT COUNTY—Atlantic's Rice 1, nw ne nw 11-28s-15w, lcn.

RENO COUNTY—Schneider's Kroecker 1, ne ne ne 12-22s-5w, dr 3977 ft. Carey's McPheeters 1, ne ne nw 22-26s-8w, ur 6-in csg 3830 ft. McCole's Mathews 1, sw nw nw 15-24s-10w, ur 8-in csg 3388 ft. Amerada & Westgate-Greenland's Johns 1, se se se 25-22s-2w, rust 3902 ft. Fould's Ehnen 1, ce sl se se 33-23s-9w, ponds.

RICE COUNTY—Price's Gemeinhardt 1, ne ne se 18-18s-10w, pb to 3298 ft, testing. Marylyn Oil's Vincent 1, nw nw ne 5-21s-10w, ru.

ROOKS COUNTY—Producer's Ham 1, sw sw nw 25-7s-19w, sd 330 ft. Graham's Fike 1, sw sw sw 9-9s-17w, co 3384 ft. Carter's Leist 1, sw sw sw 10-8s-17w, rur.

RUSSELL COUNTY—Parks' Gorham Est. 1, sw nw ne 19-15s-15w, td 3118 ft, set 6-in csg. Jones' Kuhnle 1, se se nw 4-15s-12w, set 8-in csg 3303 ft, woc. Smith & Unruh's Stielow 1, nw nw nw 32-11s-14w, fsg 2254 ft. Atlantic's Boxberger 1, ne se nw 10-15s-14w, ur 5-in csg 3210 ft. Central Pet.'s Furthmeyer 1, se se se 22-14s-15w, rig. Gulf's Punker 1, c e½ nw sw 22-15s-12w, dr 3205 ft. Lauck & Moncrief's Miller 1, ne nw nw 29-13s-14w, dr 2630 ft.

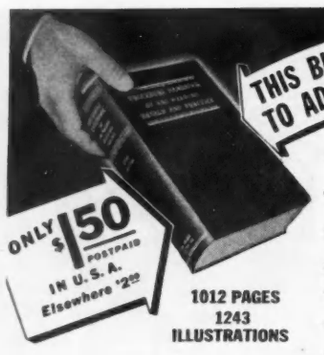
SEDGWICK COUNTY—Talbott's Downs Est. 1, se se nw 32-28s-2e, testing. Union O. & R.'s Howell 1, sw sw sw 6-29s-1e, reset 10-in csg 2298 ft, woc. Hudson's Fulton 1, ne ne se 35-28s-1e, sd 1738 ft. McNabb's Garrett 1, se sw sw 18-29s-1e, dr 3130 ft.

STAFFORD COUNTY — Terry & Feaster's Negley 1, sw sw ne 23-22s-12w, sd 3743 ft. Lindsay & Bailiere's Tiepermann 1, sw sw nw 32-22s-12w, dr 3663 ft. Knight's McNickle 1, se se ne 2-24s-11w, rur. Nat'l Ref. Co.'s Bonham 1, sw sw se 28-25s-12w, td 4213 ft, testing. Continental's Fair 1, c nl sw 12-25s-13w, rust 4163½ ft. Pryor & Lockhart's DeSalms 1, ne ne ne 3-25s-11w, dr 3635 ft. Cardinal's Fischer 1, sw nw sw 31-21s-12w, dr 2636 ft. Continental & Phillips' Curtis 1, se se se 26-24s-13w, dr 2700 ft. Stanolind's Carlile 1, ne se sw 22-25s-12w, mim.

SUMNER COUNTY—Saco's Phipps 1, sw se ne 24-30s-1w, dr 3060 ft. Colonial's Miles 1, se ne ne 30-30s-4w, rot rig. Shawver, Pryor & Lockhart's McCowen 1, sw sw sw 18-32s-1w, dr 2930 ft. Murphy's Tate 1, se se nw 31-32s-2e, woc 173 ft. Hapenney's Evers 1, se se ne 27-31s-2e, dr 1622 ft.

TREGO COUNTY — Manning & Martin's Lynd 1, nw nw sw 16-11s-21w, td 4057 ft, abd.

WOODSON COUNTY—Reeser's Weide 1,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nw nw se 18-25s-14e, sd 1150 ft. Union Oil & Royalties' Laidlow 1, c el nw sw 35-25s-15e, td 1404 ft, shot w 10 qts, co. Petty's Tipton 1, nw nw ne 31-25s-14e, mach. Carft's Pratt 1, nw nw sw 36-26s-15e, dr 1485 ft. McGinnis' State Bank 1, nw ne ne 14-26s-15e, mach.

ILLINOIS

BOND COUNTY—Universal's Molden 1, nw nw nw 24-6n-4w, td 2045 ft, rust. Whitehead's Pollan 1, nw se sw 26-6n-2w, dr 3125 ft. Rigall's Neillson 1, ne ne nw 32-5n-4w, lcn.

CLAY COUNTY—Connie Oil's Schnautz 1, se sw ne 31-4n-8e, cor 3036 ft. Wicklund's McCauley 1 "A," ne sw nw 7-2n-9e, der. Campbell's Henderson 1, c n½ ne ne 7-4n-7e, C & P. Carter's Cox 1, c e½ se sw 14-4n-5w, der.

CLINTON COUNTY—Dalton's Clifton 1, ne sw sw 15-1n-4w, sd 1535 ft. Schlosberg & Siegel's Monken 1, ne sw sw 4-2n-1w, sd 1640 ft. Wright's Wise 1, nw nw se 24-1n-3w, mim. Noll & Conrey's Barth 1, nw se sw 12-1n-1w, td 1393 ft, testing. Gross' Eversgerd 1, sw nw sw 22-1n-4w, dr 1081 ft. Lilly's Siegler 1, nw ne ne se 12-1n-1w, will lower 6-in csg. Thompson-Self's Hanseman 1, se nw ne 12-1n-1w, td 1391 ft, testing. Penn-Illinois' Noller 1, sw sw sw 28-2n-1w, dr 1630 ft. Stewart's Schnitzmyer 1, sw nw sw 6-1n-1w, sd 120 ft.

COLES COUNTY—Miller's Tomberlin 1, se se se 21-11n-10e, spd & sd.

CUMBERLAND COUNTY—Jolly-Hill-Stipes' Jenkins 1, se ne ne 30-10n-9e, sd 2130 ft. Nat'l Consumer's Vanderhuff 1, nw ne nw 19-9n-9e, mog.

EDWARDS COUNTY—Cotton & Laller's Hays 1, ne ne ne 4-1s-10e, lcn.

EFFINGHAM COUNTY—Kingwood & Carter's Bartel 1, c e½ ne nw 26-6n-5e, td 4102 ft, testing. Kingwood's McWhorter 1, c e½ se nw 15-6n-6e, dr 3031 ft. Graham-Duncan's Richers 1, c n½ se nw 18-6n-7e, spd. Kroger's Shoenhoff 1, se nw sw 5-8n-7e, spd & sd. Obermeyer's Atkins 1, nw nw ne 3-6n-9e, dr 1310 ft.

FAYETTE COUNTY—Farrely's Lilly 1, se sw se 16-8n-3e, ur 8-in csg. Wilson & Stokes' Fee 1, nw sw ne 14-8n-3e, lcn. Kesl's Metzger 1, c n½ ne nw 19-5n-2e, der.

FRANKLIN COUNTY—Washburn's Neil 1, c e½ se se 6-5s-4e, co 2640 ft.

JEFFERSON COUNTY—Sturbois & Tomberlin's Osborne 1, c nw se 8-2s-2e, dr 2085 ft. Nollem & Benoist's Kelley 1, ne nw ne 25-4s-2e, dr 2753 ft. Dee's Hamilton 1, ne sw nw 20-4s-3e, td 2911 ft. Myers Bros.' Duchworth 1, c e½ sw ne 33-4s-3e, rig. Dee & Foltz's Hamilton 2, sw sw nw 20-4s-3e, sd 1718 ft. Hausman's Myers 1, nw nw sw 7-1s-3e, moving mat'l out. Foltz's Carroll 1, ne ne se 16-2s-1e, fsg 2225 ft.

JERSEY COUNTY—Boyd's Wyman 1, nw se nw 32-7n-12w, sd 930 ft.

MACON COUNTY—Warner Bros.' Peterson 1, nw nw sw 3-15n-2e, ur 5-in csg at 650 ft.

MARION COUNTY—Siegel & Schlosberg's Roddy 1, sw se sw 20-2n-3e, sd 2159 ft. Marion Oil's Wilson 1, ne ne se 18-3n-3e, sd 1475 ft. Hackman & Harris' Britt 1, nw nw nw 36-4n-1e, sd 1050 ft. Albachtan & Sims' Nichols 1, se sw se 12-4n-4e, pb to 2745 ft, reacid with 2000 gals, swbg. Dalton's Ira Dalton 1, nw se ne 19-1n-3e, sd 135 ft. Oil Royalties' Suggs 1, c sw nw nw 11-2n-1e, to spud. Coyer's Mulvaney 1, se ne se 6-2n-4e, spd & sd. Shedden's Pawlica 1, sw ne sw 32-2n-1e, sd 1910 ft. Stewart's Kuester 1, nw sw sw 5-1n-1e, sd 320 ft. Dalton Oil's Wesner 1, sw sw nw 24-2n-1e, ru mach.

MASSAC COUNTY—Kahle's Harvick 1, sw sw sw 23-14s-3e, co 2873 ft.

MENARD COUNTY—Johnson Bros.' Fee 1, c sw sw 24-19n-5w, dr 1380 ft.

MONTGOMERY COUNTY — Myer's Klekamp 1, sw sw se 29-8n-5w, dr 430 ft.

POPE COUNTY—Whitlock's Amthis 1, nw nw ne 12-11s-5e, dr 1694 ft.

RANDOLPH COUNTY—Pioneer O&G Co.'s Johnie 1, se nw nw 28-6s-6w, td 716 ft, abd. Bremen's Wilson 1, se se se 22-6s-6w, spd & sd.

RICHLAND COUNTY — Mammoth's McCauley 1, sw se nw 28-3n-9e, co 3146 ft. Anderson & Cunningham's Franklin 1, nw nw ne 34-5n-10e, spd & sd. Parker's Berry 1, se sw ne 22-2n-14w, spd & sd. Miller & Ake's Schlichenmeyer 1, c ne sw se 16-3n-10e, spd & sd. American Exploration's Johnson 1, skid rig to se se nw 29-4n-9e, der. American Nat'l Drlg's Everson 1, ne ne se 23-3n-9e, sd 2839 ft.

SALINE COUNTY—Rogers' Saylor 1, se se se 3-10s-6e, sd 1502 ft. Bolton's Beagle 1, nw nw nw 13-9s-7e, fsg 1871 ft.

SCOTT COUNTY—Gregory & Mechling's Foltz 1, nw sw ne 31-14n-14w, td 1203 ft, abd. Sun Oil's Goodwin 1, c w½ ne se 22-13n-12w, dr 850 ft.

SHELBY COUNTY—Farrior's Smith 1, ne ne ne 1-12n-2e, lcn

WARDS COUNTY—Schmidt's Strenne 1, ne nw ne 5-1n-14w, spd & sd. Leach Bros.' Lee 1, sw ne se 11-1s-10e, dr 3159 ft. Cotton's Leibke 1, ne ne sw 20-1n-14w, C & P.

WASHINGTON COUNTY — Bitterman's Jesse 1, c se ne 16-3s-2w, dr 1400 ft.

WHITE COUNTY—Heldt's Dagley 1, sw ne sw 12-7s-9e, C & P. Hunt's Smith 1, 11-5s-8e, mi mach.

NORTH LOUISIANA

BIENVILLE PARISH—De Soto O&G Co.'s Wm. Ashley 3, c nw se 15-16n-10w, rog. Gulf's Goodpine Oil Co. 1, se sw 25-14n-8w, elev 157 ft, massive anhydrite 5303-5420 ft, dr 9343 ft, hd gray sand, strks black shale. Producers O&G Co.'s Lockett 1, ne ne 9-15n-10w, owdd, arr set csg and test so, td 2960 ft.

CADDO PARISH — A. O. Olson et al's Sharpe 1, c nw ne 10-18n-16w, elev 265 ft, base massive anhydrite 4687 ft, base stringer 4776 ft, gauged 38 bbls 53 grav oil and dist, 6 bbls sw and 2½ mil ft gas through quarter-inch choke, td 6061 ft.

CATAHOULA PARISH—G. E. Foster et al's W. S. Peck 1, c s½ 39-10n-8e, sd 20 ft.

CLAIBORNE PARISH—Union Prod. Co. et al's Brownfield 2, c se nw 5-19n-5w, elev 235 ft, dr 10,116 ft. Coleman Unit 1, 30-20n-5w, dr 3356 ft. Weaver Oil Corp.'s Alex Edmonds 2, sw ne 16-20n-5w, fsg, td 4305 ft. C. R. Schuster et al's Kilgore 1, ne se 28-21n-5w, rur.

DE SOTO PARISH—Clear Lake Oil Co.'s Woolums 1, nw nw 29-12n-12w, cored sand, so arr set csg, td 2694 ft. S. S. Alexander's Stell 1, ne ne 5-12n-16w, set 1200 ft 5½ in csg, arr perf and test Glen Rose, td 6002 ft. The Hunter Co.'s Parker 1, 26-12n-16w, lcn. M. L. Stephens' M. E. Garrett 1, nw ne 10-11n-16w, lcn. La. Seaboard's Lawrence 1, sw ne 36-12n-14w, elev 332 ft, showed 80 ft mud, so and sg drill stem test 2038-62 ft, fsg drill pipe, td 2062 ft.

FRANKLIN PARISH—Southern Star Pet. Co.'s Grayson 2, sw ne 36-12n-6e, sd 1755 ft; Grayson 3, sw ne 36-12n-6e, lcn (300 ft n of No. 2).

GRANT PARISH—C. L. Thompson et al's Woodward 1, ne sw 10-6n-3w, dr under surf csg. C. R. Bowers et al's O. P. Harrison 1, ne sw 21-8n-5w, dk and mir.

LINCOLN PARISH—Lyons & Neely's Fred Brazzell 1, c se nw 17-20n-4w, rur. E. T. Oakes, H. D. Easton et al's N. L. Griggs 1, c sw 36-18n-1w, elev 199 ft, shot porous lime formation (Petitt) 5932-41 ft, acidized twice, sg arr acidize again, td 6260 ft.

MADISON PARISH—Continental Oil Co.'s Singer Mfg. Co. 1, c ne ne 3-15n-11e, mim.

MOREHOUSE PARISH—Hunter & Rowe's E. M. Clarke 1, 10-20n-7e, elev 103 ft, arr deepen 500 ft, td 7022 ft, top lime 6218 ft.

NATCHITOCHES PARISH—Jos. E. Popkins' Peavy-Wilson Lbr. Co. 1, nwc 36-7n-9w, rur. W. T. Ryan et al's Lambert 1, nw nw 4-8n-9w, dr 1060 ft.

RED RIVER PARISH—Glassell & Whitehurst's Le Long 1, ne nw ne 25-12n-11w, sr 3113 ft.

SABINE PARISH—W. L. McClanahan et al's Frost-Johnson 1, se ne sw 22-9n-13w, mim. J. G. Sutton-Zwolle Oil Co. et al's Sabine Lbr. Co. 1, se nw ne 23-7n-14w, tested 1200 ft oil drill stem test 3841-53 ft, 7-in csg 3840 ft, acidized twice, swabbed dry 600 ft oih, td 3856 ft. (Washita). Kirk-Greenway et al's Whitney Corp. 1, ne ne 8-9n-13w, owdd, rur to deepen 1000 ft, td 8510 ft.

TENSAS PARISH — H. B. Schumacher's Mounds Land Co. 4, 39-11n-12e, top Cockfield 1025 ft, ran formation tester showed 400 ft sw 1025-48 ft, arr deepen, td 1048 ft.

UNION PARISH—Joe Modisett et al's Frost Lbr. Co. 1, ne sw 14-21n-1e, elev 188 ft, top lower Marine 6161 ft, coring 8582 ft, bro lime. Standard of La.'s Frost Lbr. Co. 1, c sw sw 13-23n-2w, lcn.

WEBSTER PARISH — Magnolia's Frank Sexton 1, c sw ne 32-23n-9w, elev 225 ft, top first anhydrite stringer 4175 ft, top massive anhydrite 4348 ft, top Travis Peak 5701 ft, 9⅝ in csg 6838 ft, top lower Marine 7605 ft, top Bodcaw (no show) 8032 ft, dr 8930 ft sandy shale. W. M. Chambers et al's Thomas 1, se se 11-22n-11w, dk.

WINN PARISH—G. W. Zeigen's La. Cent. Lbr. Co. 13, 4-13n-1e, woc 63 ft.

SOUTH LOUISIANA

ACADIA PARISH — Humble's Finch 1, South Crowley area, 22-10s-1e, coring shale 9965 ft.

AVOYELLES PARISH—G. C. Koch's Kelone 1, Marksville area, 21-2n-3e, dr shale 5000 ft.

BEAUREGARD PARISH—Republic's Lutcher Moore 1, Bancroft area, 10-6s-13w, coring shale 7500 ft.

CALCASIEU PARISH — Sun's Lutcher Moore 1, nw of Starks, 1-8s-13w, dr at 6250 ft.

CAMERON PARISH — Humble's Miami Corp. 1-B, Little Cheniere area, 7-14s-6w, dr sand in sdtr hole at 9075 ft.

IBERIA PARISH—Texas Co.'s State 4, Fausse Point, 35-11s-8e, coring sand and sandy shale 9266 ft; same operator's Bayless & Jones 1, Jefferson Island, 58-12s-5e, dr lime at 6861 ft; same operator's State 2-B, Vermilion Bay, 16s-5e, dr shale 9856 ft.

JEFFERSON PARISH—J. Szodomka's Carroll 1, n of New Orleans, 125-12s-11e, dr shale 3043 ft.

JEFFERSON DAVIS PARISH—Stanolind's Conover 1, w of Welsh, 30-9s-5w, abn 7311 ft. Union Sulphur's Calcasieu National Bank 2, Woodlawn area, 12-9s-6w, dr shale 8780 ft.

LAFAYETTE PARISH—Continental's Foreman 1, s of Scott, 36-9s-3e, dr shale 9640 ft.

PLAQUEMINES PARISH — Gulf's Grand Prairie Levee District 1-A, Bird Island area, 6-20s-19e, dredging canal.

ST. BERNARD PARISH—Gulf's State RR 3, Lake Borgne, 6-12s-15e, dr shale 3055 ft.

ST. JAMES PARISH—Continental's Realty Operators 1, Hester or Convent prospect, 17-12s-5e, woc 304 ft.

ST. LANDRY PARISH—Noxon & Toomb's Boagni 1, Opelousas area, 41-6s-4e, fsh 6740 ft.

ST. MARTIN PARISH—Shell-Tide Water's Unit 1, w of Lake Verrett, 11-14s-12e, abn 10,000 ft.

TERREBONNE PARISH—Fohs' Buckley 1, Dulac area, 77-19s-17e, coring shale 10,600 ft; same operator's State 1, La Terre area, 41-19s-19e, dr plug at 9226 ft.

VERMILION PARISH—Magnolia's Ferguson 1, West Gueydan prospect, 5-12s-2w, woc 3084 ft.

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WRITE FOR INFORMATION

MISSISSIPPI

CALHOUN COUNTY—S. & O. Properties, Inc.'s G. C. Cooner 1, se ne 12-24n-8e, dr 2310 ft last report.

CLAIBORNE COUNTY—Claiborne County Dev. Co.'s Ruth Hayden 1, s½ se 55-11n-2e, elev 199 ft, top Sparta 1802 ft, arr deepen 2512 ft sand (Sparta).

GEORGE COUNTY—Cleve Love et al's J. J. Newman Lbr. Co. 2, c sw 9-1s-8w, elev 111 ft, 10-in csg 1374 ft, bailer tested sw, slight sg, sd repr rig, td 1382 ft in top of Het.

HARRISON COUNTY—G. A. Hesse et al's Hingen 1, e ne 12-7s-10w, arr deepen 2700 ft.

HINDS COUNTY—Cleve Love et al's Montgomery 1, sw se se 28-6n-4w, lcn; S. F. Johnson 1, ne se 29-6n-1w, elev 343 ft, top black shale 3040 ft, top chalk 3097 ft, top Eutaw 3617 ft, top red beds 3657 ft, drill stem test at 3097 ft, dry, 7-in csg 3355 ft, woc, td 3707 ft. Progressive Realty Co. 1, se sw 35-6n-4w, woc 13⅜ in csg 346 ft (8500 ft test).

JONES COUNTY—Snow-Black Pet. Co.'s Cranford 1, s½ nw 29-7n-12w, ran formation tester no show, dd, td 4280 ft (Wilcox).

LAMAR COUNTY — Southern Miss. Pet. Corp.'s Morris 1, nw se 4-2n-14w, elev 332 ft, topped Het at 1138 ft, 10-in csg at 1144 ft, top Vicksburg (?) 1535 ft coring lime 1564 ft.

PERRY COUNTY—Phillips Pet. Co.'s J. J. Newman Lbr. Co. 1, se se sw 21-2n-10w, elev 210 ft, temp abn, td 8434 ft.

SIMPSON COUNTY—Goodwill O&G Co.'s Berry 1, se sw 33-2n-4e, sr, td 2338 ft, shale and sand.

YALABOUSHA COUNTY—Acme Holding Co.'s S. D. Boyle 1, nw nw 33-25s-7e, elev 415 ft, sd 810 ft Midway.

OKLAHOMA

ADAIR COUNTY—Maddox's Penn Mutual Life Ins. Co. 1, c s½ ne nw 5-16n-24e, sd 520 ft.

ATOKA COUNTY—Sheldon & Gardner Pet.'s Lee 1, ne nw sw 2-4s-10e, set 7-in csg 2528 ft, co. Stanolind & Amerada's Ridgway 1, nw ne ne 24-3s-9e, td 3331 ft, testing.

BECKHAM COUNTY—Mid-American's Biscoe 1-A, sw sw sw 28-8n-22w, sdo 2705 ft.

CARTER COUNTY—Lloyd & Noble's Revelle 1, sw sw se 21-3s-2w, td 4028 ft, sdo. The Texas Co.'s Cathay 1 "B," se ne ne 6-5s-1w, dr 5237 ft.

CHOCTAW COUNTY—Ross' Hardy 1, se se nw 21-7s-15e, spd.

CIMARRON COUNTY—Barnsdall's School Land 1, c nw se 35-5n-5ecm, lcn.

CLEVELAND COUNTY—Hollenbach's Mantooth 1, nw nw nw 24-6n-1e, rig. Delaney's Bugher 1, se se sw 12-7n-2w, dr 4185 ft.

COMANCHE COUNTY—Wolf's Costinus 1, sw sw se 30-4n-11w, spd. Scott's Kuntz 1-A, se ne se 27-4n-11w, sd 2800 ft. Roach's Green 1-A, se se sw 2-1n-13w, sd 760 ft.

COTTON COUNTY—W & P Oil's Worsham 1, nw nw se 15-4s-10w, lcn.

CREEK COUNTY—Mosier's Holcomb 1, se sw ne 19-18n-1e, sd 3018 ft.

GARFIELD COUNTY—Waukomis Oil's Clark 1-A, nw nw nw 34-21n-6w, td 7336 ft, may reacidize.

GARVIN COUNTY—Edwards' Clark 1, ne ne ne 16-3n-3e, rust, dr cem to 1913 ft, p 75 bbls oil and 20 bbls wtr, 24 hrs.

GRADY COUNTY—Gulf's Thomas 1, sw nw nw 14-4n-5w, td 11,415 ft, dp stuck. Doyle's Huffine 1, nw nw se 30-5n-8w, der.

GREER COUNTY—Medlin's Broudie 1, nw nw nw 5-6n-20w, td 90 ft, abd. McDonald's Fite 1, se se nw 34-7n-21w, sd 1114 ft. Gauntt & Baker's Parks 1, nw nw sw 29-7n-20w, sd 720 ft. Everitt's Graumann 1, ne nw nw 11-5n-21w, sd 460 ft.

HUGHES COUNTY—Phillips Pet.'s Beeker 1, ne nw sw 8-5n-10e, pb to 5660 ft, testing. Doup's Bank 1, ne ne nw 7-7n-9e, dr at 370 ft. Rives' Hawthorne 1, sw sw se 19-7n-10e, lcn. Phillaine's Morrison 1, se se sw 13-9n-10e, dr 2886 ft. Amerada & Stanolind's Preame 1, nw nw se 29-9n-9e, td 4268½ ft, ob to 3367 ft, woc. Moore's Hunter 1, ne ne nw 30-4n-9e, dr 4078 ft. Marbett Oil's Breeding 1, ne sw ne 12-7n-8e, co to 1097 ft, sd. Amerada & Stanolind's Martin 1, nw ne ne 6-9n-9e, td 3107 ft, abd. Troup & Strickland's Brown 1, nw sw ne 32-6n-8e, sd 660 ft.

JEFFERSON COUNTY—Weir's Hayes 1, se se nw 23-7s-7w, der.

JOHNSTON COUNTY—Patton's McCrummens 1, sw sw ne 16-1s-6e, td 1382 ft, abd. Shelton's Chapman 1, c nw nw 26-4s-6e, td 3176 ft, pb to 2204 ft, bail & co at 1000 ft.

KAY COUNTY—Shafer's McKee 1, ne ne nw 20-28n-1w, sd 2500 ft. Shaffer's Rudolph 1, ne ne sw 27-29n-1w, cel. Nye's Willin 1, se se sw 24-27n-4e, c & p. Pierce's Hannan 1, se se se 26-28n-2e, sd 2000 ft.

KIOWA COUNTY—Hughes & Reese's Fultz 1, se se se 10-6n-18w, sd 1238 ft. Anderson Prichard's Hancock 1, se se nw 23-6n-15e, td 737 ft, rng 10-in csg.

LINCOLN COUNTY—Wilcox's Royer 1, se se ne 18-14n-6e, sdo 3372 ft. Stanolind & Amerada's Strader 1, nw nw ne 8-13n-3e, td 5277 ft, testing; Wilcox's Evans 1, sw sw nw 21-14n-6e, td 3106 ft, rust.

LOGAN COUNTY—The Texas Co.'s Roper 1, c w½ sw se 22-15n-1e, td 5542 ft, sdo. Carter's Lydick 1, c e½ nw ne 23-15n-4w, dr 4200 ft. Sinclair Prairie's Crews 1, sw sw ne 27-16n-1e, br.

LOVE COUNTY—Sinclair Prairie's Peabody 1, ne ne ne 35-6s-2w, dr 5085 ft.

MARSHALL COUNTY—Robb's Vittitoe 1, c ne se 11-5s-4e, co to 5461 ft & rng csg.

MURRAY COUNTY—Owens' Gryer 1, ne se ne 34-1s-3e, dr 2685 ft.

MUSKOGEE COUNTY—Cusack's Elliott 1, c nl nw sw 20-15n-20e, rog; Fee 1, ne sw se 20-15n-20e, spd 65 ft. Clants' Jennings 1, nw nw ne 8-13n-19e, mach, sd Midco's Dunagan 1, se se ne 31-11n-19e, dr 1600 ft.

OKFUSKEE COUNTY—Burke-Greis' Capps 1, se se se 7-13n-7e, td 3227 ft, rust. Alma Oil's Martin 1, sw sw sw 4-12n-7e, rig.

OKMULGEE COUNTY—Bryna Pet.'s Thompson 1, c se ne ne 8-15n-11e, set 6-in csg 2695 ft.

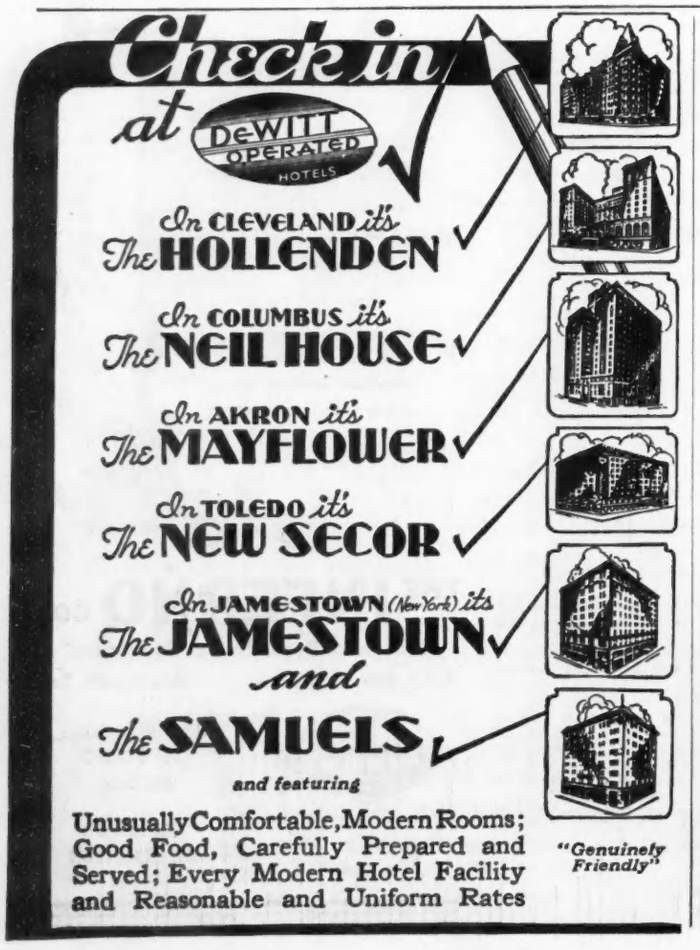
OSAGE COUNTY—Norbla's Osage 1, se se se 18-25n-7e, sd 1129 ft, wo wtr. Chevalier-Simon's Osage 1, nw nw sw 33-27n-5e, dr 1760 ft. Wah-Sha-She Oil's Osage 1, ne ne sw 4-28n-9e, lcn.

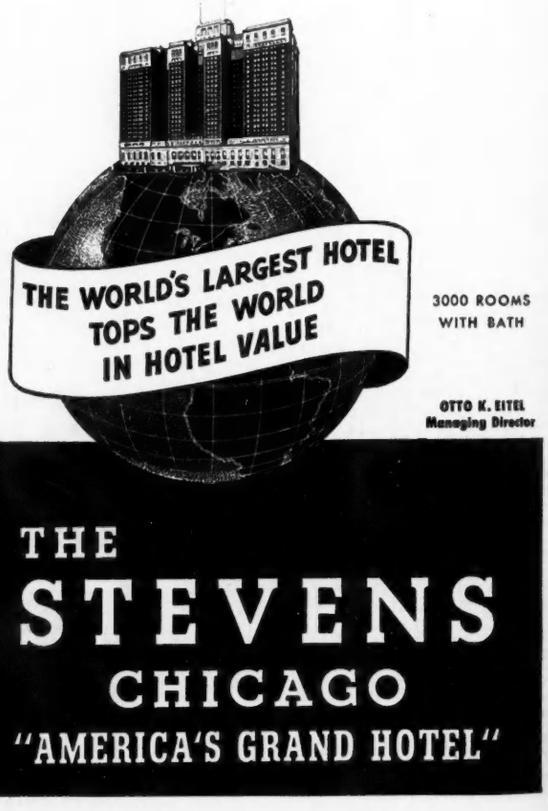
PAWNEE COUNTY—Ross & Patterson's Morhain Heirs 1, ne ne nw 33-20n-7e, rig. Darby's Lillie 1-A, nw nw sw 1-22n-3e, c & p. Owens' Riddle 1, c e½ e½ sw 8-23n-5e, rust.

PAYNE COUNTY—Maradun Oil's Moore 1, se sw nw 17-18n-1e, td 5301 ft, to dr ahead. Kemp's Rafferty 1, se se ne 6-18n-5e, td 3666 ft, blew tools 200 ft off btm and bridged, hfo 12 hrs. Sun Oil's Scafe 1, se se ne 12-18n-1e, dr 1581 ft. The Texas Co.'s Longan 1, c w½ nw nw 12-17n-1e, c & p.

PONTOTOC COUNTY—Union Dev. Co.'s Abbott 1, sw nw ne 34-3n-6e, sd 3320 ft. Lee's Weatherly 1, nw se nw 24-1n-7e, sd 700 ft. Cowley's McCormich 1, sw sw se 29-2n-4e, sd 275 ft. Delaney's Perrine 1, se sw se se 12-5n-4e, rur. Caloma's Brent 1, se ne sw 4-1n-6e, sd 1430 ft. Sandback's Porter 1, ne ne sw 28-4n-7e, mach. United Pet.'s (was Conley Drlg.'s) Fleming 1-A, sw se se 12-5n-4e, td 2610 ft, to 2605 ft, to pop.

POTTAWATOMIE COUNTY—Davis' Jones 1, nw ne sw 34-6n-5e, td 2314 ft, to pop. McLenen's Fidler 1, ne ne nw 9-5n-5e, mim. Mid-





Continent's Smith 1, ne se sw 31-7n-4e, dr 1230 ft. Alma Oil's Smith 1, se se ne 32-7n-5e, td 4040 ft, p 930 bbls oil, 24 hrs, comp. Farmer Mutual's School Land 1, se se nw 16-5n-5e, pits. Shell's Boley 1, se se sw 8-11n-6e, rig.

SEMINOLE COUNTY—Woodson & Maradun's Gilliland 1, se se sw 24-11n-7e, td 4295 ft. Pine's Wright 1-A, se se ne 16-6n-6e, set 7-in csg 3509 ft, rust. Villines' Swan 1, nw ne nw 26-7n-5e, dr to 3001 ft, swb 135 bbls oil, 24 hrs, 500,000 cf gas. Summitt Drlg.'s Wass 1, se ne ne 30-8n-7e, dr 3295 ft. Delaney's Swan 1, se sw sw 18-6n-6e, c & p. Greer's Swan 1, nw ne ne 25-7n-5e, c & p. Pure's Lack 1, se sw nw 3-6n-5e, rig.

STEPHENS COUNTY—Coline Oil's Johnson 1, sw se ne 1-2n-8w, fsg 9086 ft. Helmerich & Payne's Moursberger 1, c s½ sw se 29-2n-8w, td 5512 ft, to dd.

TEXAS COUNTY—Hagey's Peck 1, c ne¼ 6-1n-13ecm, sd 2842 ft. Hardendorf & Kuhn's Wiggin 1, c nw¼ 1-2n-14ecm, 30,000,000 cf gas, 2745-53 ft, si; Wiggin 2, c ne¼ 2-2n-14ecm, lcn.

TILLMAN COUNTY—Grimes' Hall 1, sw ne sw 12-3s-19w, dr 2760 ft. Russell & Day's Hasley 1, nw ne nw 4-1s-19w, td 80 ft, recem 10-in csg. Smith's Hammell 2, ne nw nw 6-5s-15w, dr 1800 ft.

TULSA COUNTY—North's Leibig 1, ne nw nw 31-19n-14e, td 1944 ft, pb to 1870 ft, si for gas well.

WASHITA COUNTY—McWhirter's Fee 1, nw sw sw 34-8n-19w, dr 2125 ft.

EAST TEXAS BORDER COUNTIES

HARRISON COUNTY—Ark. Fuel Oil Co.'s C. M. Abney 1, Eason Little sur, co hole to deepen, td 4820 ft (Glen Rose).

MARION COUNTY — Tom Bell's Carrie Moseley 1, claim so, sd for csg, td 2524 ft.

PANOLA COUNTY—Preston et al's Rushing 1, Mannan Smith sur, sd with fsg job, 3276 ft. Texas Co.'s Claude Adams 1, Thos. Cox sur, 13⅜ in csg 579 ft, 9⅝ in csg 5940 ft, dr 6925 ft hd sand and shale.

SHELBY COUNTY—C. L. Cope's Pickering Lbr. Co. 1, English sur, rur. Vaughn Prod. Co.'s Pickering Lbr. Co. 1, Brooks sur, lcn.

SOUTH TEXAS

CORPUS CHRISTI DISTRICT

DE WITT COUNTY—Howeth's Fuhrken 1, Walton sur, dr 3550 ft.

GOLIAD COUNTY—DeArman & Winward's Drier 1, BS&F sur 7, cor below 3110 ft in sdtr hole, otd 5535 ft. Goliad's Lutenbacher 3, blk 25, perf 20 shots 5358-68 ft, flowing mud and wash water, no oil.

HIDALGO COUNTY—Gulf States' Cardenas 1, sh 156, cor 7370 ft. Johnson's Daskam 1, blk 33, por 45, dr 1800 ft. Morton's Guerra 1-A, por 41, td 2196 ft, blew out from sand 2027-29, bridged, prep to clean out to resume dr. Smith's Fairbanks & Young 1, por 46, cor 2460 ft.

JACKSON COUNTY—Magnolia's West 2, Musquez gr, ru.

JIM WELLS COUNTY—Callaway's Garcia 1, sur 62, killed, showed oil in lower Vicksburg or Frio when blowing out, depth 6246 ft. Gilcrease's Adams 1, blk 28, dr 2376 ft. Graham's Martens 1, La Vaca gr, sp. Heard & Heard's Adams 1, sur 22, ru. Howell's Lindsay & Reed 1, La Vaca gr, dr 4035 ft. Pressnal & Moser's Mortgage 1, La Vaca gr, cored gas and oil sand 3480-96 ft, dst 3480-86 ft, rec 325 lbs. in 5 min, set 7 in csg at 3496 ft, wocs. Red Bank's Adams 1, blk 40, Waldren O&G subd, dr 2000 ft. Smith & Story's Adams 2, dr 3000 ft. Southern Minerals' Talbott 2, lcn.

KARNES COUNTY—Randon's Karbach 1, Tomkins sur, dr 2000 ft.

LIVE OAK COUNTY—Franklin's Russell 1, Hefferman sur, sd repairs, td 1310 ft. H. & H.'s Nichols 2, Henry sur, sd 1004 ft, prep dd. Newton & Wilkerson's West 2, Wright sur, ru. Schimmel's West 1, ru to dd, 256 ft. Unit & Turner's Terrell 1, O'Boyle sur, dr 2600 ft. Wilson's Great American 1, sec 47, prep perf and retest, td 1967 ft.

NUECES COUNTY—Coastline's State 1, tr 314, mir. Conroe's Morgan 1, sur 413, dr 6465 ft. Corpus Christi, Howington 1, sur 156, pb 5000 ft, to sdtr again, otd 5385 ft. Renwar's Kenedy A-1, sur 420, cor 5725 ft; Kenedy B-1, dr 3000 ft. Seaboard's Luby 7, sec 1, sh 2, dr below 6700 ft. Southern Minerals' French 1, sur 417, dr 5870 ft. Texon's McCann 1, sh 9-G, Collins partition, dr below 4500 ft. Union's Brown 1, sec 87, dr 5460 ft; Rivers 4-A, Garcia gr, perf 6640-50 ft, tested dry, reperf, td 7702 ft; Torbett 1, sec 31, td 7700 ft, pb to comp at upper level. Western Gulf's Isensee 4, sur 402, dr 5100 ft.

REFUGIO COUNTY — Hogan's Kelly 2, Bower sur, cor 5980 ft. Porter's Lambert 1, Power & Hewitson, dr 4200 ft.

SAN PATRICIO COUNTY—Burton's Owen 1, sec 62, mir. Humble's Smith & Talbert 1, lots 1 and 2, sec 37, td 4828 ft, testing.

WILLACY COUNTY — Magnolia's Armendiaz 1, sh 4, wocs, td 9641 ft, 8⅝ in csg at 9635 ft. Sal Vieja's Garcia 2, sh 59, cor below 8050 ft.

SAN ANTONIO DISTRICT

ATASCOSA COUNTY—Allison's Mischwitz 1, Garza sur, sd 250 ft. S. W. R.'s Miller 1, sd 435 ft. Surley & Phalon's Krisch 1, sec 1207, dr below 300 ft.

BASTROP COUNTY—Humble's Hillsman 1, Cunningham sur, dr 4000 ft. Marts & Beavan's Haynes 1, mim. Western Gulf's Green 1, Williams sur, lcn.

BEXAR COUNTY—Nami's Field 1, Bustillos sur, dr below 100 ft. Noake's Oppenheimer 1, Miller sur, sd 210 ft. Philtop's Cassin 1, Rodrigues sur, ru cable tools to dd below 1202 ft. Walkowiak's Peterson 1, Virm sur 195, co, testing, td 1285 ft.

BURLESON COUNTY—Red Bank's Coffield 1, Santef sur, dr 3400 ft.

CALDWELL COUNTY — McNeill's Wattinger 1, Pace sur, sd 700 ft. Owens & Van-Wagnen's Smith 1, Roe sur, sd 2323 ft. Richards' Sahane 1, Maxwell sur, fsg 629 ft. Tinkle's Blackwell 1, Roe sur, dr 2000 ft.

EDWARDS COUNTY — Evans & Love's Brown 1, blk 3, sd 6257 ft.

FRIO COUNTY—Pagenkopf & Jamieson's Houston 1, Figuerros sur, shooting at 2600-50 ft with 100 qts nitro, td 2651 ft.

MAVERICK COUNTY—Wellington's Chittim 1, sec 129, testing around 5700 ft; Chittim A-1, sec 156, dr below 3850 ft.

MEDINA COUNTY—Cromwell's Tondrie 1, Rogers sur, dr 600 ft. Dykstra's McMenmey 2, Petty sur, dr below sur csg. Ewing's Riff 1, sur 42, wocs, td 716 ft. Trentman & Merrit's Carle 1, sur 72½, core below 1900 ft. Walker's Zuberbueler 1, sur 391, sp.

MILAM COUNTY — Tuxedo's Graham 1, Cronea sur, cor 1780 ft; Graves 1, Robertson sur, wocs, td 1174 ft.

LAREDO DISTRICT

DUVAL COUNTY — Bennett & Stanolind's Yates A-1, sec 321, prep dr below 2471 ft. Corpus Christi & Taylor 1, sec 303, sd 3403 ft. Kirby's Duval Ranch 1, sec 52, testing, td 1463 ft. Magnolia's Duval Ranch 1, sec 87, Hoffman 1, sur 111, cor 5700 ft. Oliver's Lopez 1, sur 140, lcn. Rowan & Hope's Gravis 1, sec 90, dr below 4670 ft. Schimmel's Hagist 5, sec 265, ru pump, 2196 ft. Stratton's Applerbach 1, sur 342, testing, 1090 ft. Thompson's Robles 1, sur 68, dr 1000 ft. Wright's Hyatt 1, sec 6, ru.

JIM HOGG COUNTY—Harrison's Martinez 1, sec 623, cor 3025 ft.

LA SALLE COUNTY—Ewing, Pugh 1, sur 93, set sur csg and sd.

McMULLEN COUNTY — Heard, Hall & Young's Byrne 1, Pittuck sur, dr 500 ft. Schimmel's Jefferson 1, Wright sur, lcn; Shiner Ranch 1, sec 3, lcn. W. T. & D. Prod. Co.'s Shiner 1, sec 36, mim. Wagner's Gordon 3, sec 127, dr 1500 ft.

STARR COUNTY—Borah's Garcia 1, por 71, dr 650 ft; Martinez 1, por 70, dr 450 ft; Martinez 2, por 70, dr 200 ft. Collins' Guerra 1, sh 20, cutting out ds, td 6609 ft.

WEBB COUNTY — Anderson & Moore's Benavides 1, sec 692, dr 2705 ft. Loma Novia's Adami 1, sur 345, wocs, td 1205 ft.

ZAPATA COUNTY—Bryant's Flores 1, La Huerte gr, rebldg. dk.

TEXAS GULF COAST

BRAZORIA COUNTY—Pure's State Prison Farms 1, Peach Point area, S. F. Austin sur, fsh 6515 ft.

CHAMBERS COUNTY—A. A. Cameron's White 1, Canada Ranch area, S. Brill sur, coring shale 7932 ft.

FORT BEND COUNTY—W. S. Boyle's Spencer 1, Simon area, T. Westhall sur, dr shale 6451 ft. Lomack Oil Co.'s Armstrong 1, n of Boling, S. Miller sur, abn 6022 ft.

GALVESTON COUNTY—Sun's Cade & Co. 1, Bolivar prospect, A. Dickson sur, dr shale 2218 ft.

GRIMES COUNTY—Hubert & Holt et al's Greer 1, Carlos area, P. B. O'Conner sur ,sd 3016 ft.

HARRIS COUNTY — Chapman Minerals Corp.'s Harrison 1, n of Deer Park, W. M. Jones sur, dr shale 5300 ft. O. W. Killman's Sweeney Estate 1, e of Ogburn sur, G. Williams sur, woc 6580 ft. West Prod. Co.'s Sowden 1, J. Lindsey sur, Clear Lake area, tested salt water 5990 ft, squeezed perforations.

MATAGORDA COUNTY—J. K. Dorrance's Adamick 1, Blessing area, I. & G. N. Block 7, dr shale 6125 ft. Superior Drilling Co.'s Kruger 1, McCosky area, C. Warren sur, making gas and distillate at 6694 ft.

JEFFERSON COUNTY—Humble's State 1, in Gulf of Mexico, tract 8, sd 300 ft.

SAN JACINTO COUNTY—J. W. Oliphant et al's Gibbs 1, nwc of county, C. McKim sur, dk.

WHARTON COUNTY—Strake's Poole 1, Lissie area, G. H. & H. sur, abn 7012 ft.

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FOR SALE: Gas Engines & Compressors. Two 160 HP Cooper-Bessemer twin gas engines, with two Type XB Ingersoll Rand Compressors and two 70 HP C-B Engines with two ER1 Ingersoll compressors, all belt driven with belts, starting unit, pumps, etc., in first-class condition at bargain prices for immediate removal. **WILSON PIPE CO., 2418 E. 54th St., Los Angeles, Cal.**

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Wanted by progressive organization a man experienced in acquiring leases, producing leases and supervising their development and production. Knowledge of Texas and Louisiana fields particularly desirable. State experience in detail, age and salary in last position. All replies will be treated confidential. Address Box 100, The OIL WEEKLY, Houston, Texas.

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NEW PRODUCTS FOR THE FIELD
Machinery • Tools • Equipment

"FLOATING" CARRIAGE FRONT AND "HAMMER BLOW" HANDWHEEL

Landis Machine Company

Landis Machine Company, Waynesboro, Penna., has developed a new carriage front or vise, which can be supplied as optional equipment on the "Landmaco" Threading Machine. This carriage front is a combination floating unit which compensates automatically for any misalignment of the work with the die head, and a special vise jaw operating handwheel which delivers a hammer-like blow to effect the gripping or releasing of the work with the minimum expenditure of effort.

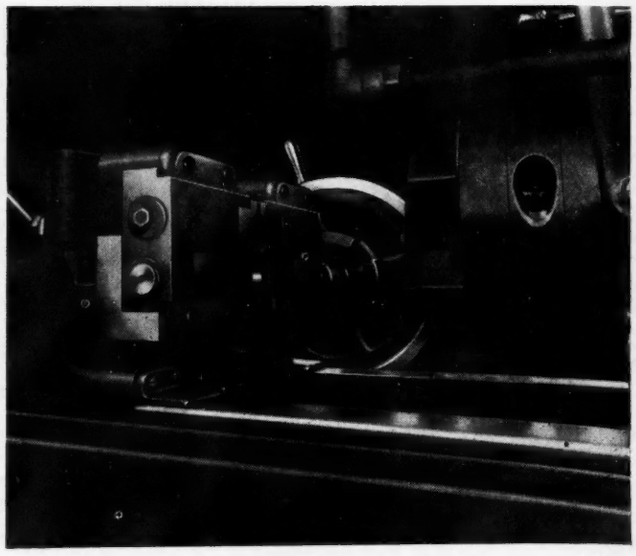
The Floating Carriage Front consists of a vise so mounted on a series of three plates as to provide both a horizontal and a vertical floating action. The mounting is such that the vise maintains a centralized position except when forced off center by misalignment between the die head and the work.

The rear plate which is bolted direct to the carriage, is provided with adjusting screws which permit adjusting the entire unit either horizontally or vertically in relation to the center of rotation.

The center plate provides the vertical floating action for the vise. Two springs and plungers are mounted in a vertical position on the outer ends of the center plate in such a manner that the lower ends of the plungers rest upon two supporting lugs which are cast into the outer ends of the rear plate. The springs are readily adjustable so that the amount of their compression can be varied to compensate for the weight of heavy parts. The spring nearest the handwheel is somewhat heavier than the other spring to assume the additional load set up by the weight of the handwheel and the torque of the cut taken by the die head.

The front plate, which also comprises the housing for the vise jaws, provides the horizontal floating action. No springs are used to obtain the horizontal floating action. Two sliding blocks mounted on the rear of the front plate, fit into elongated slots in the center plate, leaving the front plate free to slide in a horizontal direction, perpendicular to the center line of rotation.

The entire unit is held together by a pair of stud bolts which are screwed into the rear of the front plate. These studs pass through holes in the center and rear plates which are somewhat larger than the stud. The outer end of each stud is fitted with a bushing which has a bearing on the rear surface of the center plate, and a pair of lock-nuts which are set just tight enough to permit the free floating action of the plates. The bushing is long enough to pass through large holes in the face of the carriage so that the lock-nuts will be readily accessible if adjustment is necessary. The design is such as to provide a free floating action to the vise and at the same time maintain accurate alignment in a plane parallel with the face of the die head.



Landis Carriage Front.

The "hammer blow" handwheel which has been designed to use in conjunction with the floating carriage front, but which is applicable to standard carriage fronts greatly reduces the effort required to grip the work and to open a vise that has been rigidly locked. The handwheel is of the flywheel type and is free to rotate in an arc of 45 degrees on the vise screw. Two lugs, which are designed to act as hammers, are cast into the hub of the handwheel. A knocker-arm, keyed to the vise screw adjacent to the handwheel, extends out between the hammers. When the handwheel is spun or rotated quickly, a sharp blow is delivered by the hammers on the knocker-arm and since the full flywheel effect of the handwheel is obtained, the work is rigidly gripped or easily released without exertion on the part of the operator. A series of blows can be used if the jaws have been locked extraordinarily tight and likewise, the hammer blow effect can be employed to lock the jaws tighter, if desired.

This device, not only materially reduces the manual labor on a machine but also will aid in production, since time will be saved in gripping the work and opening the vise at the end of each thread.

The unit, as a whole, will also greatly improve the quality of the work since the carriage front, with the floating action as described, will insure thread concentricity, reduce chaser wear and breakage, and reduce the time required for making set up changes.

Landis Machine Company has applied for a patent on the equipment described.

CATHODIC PROTECTOR

Wincharger Corporation

Wincharger Corporation, Sioux City, Iowa, has perfected a standard production wind-electric generator for protection against pipe line electrolysis. It was designed by the company's wind-electric engineers in cooperation with pipe line cathodic protection engineers.

The unit consists of a specially designed generator 7½ inches in diameter which is driven by direct drive from an 8-foot air-foil propeller. It starts putting electricity into the pipe line in a 4-mile wind-hour breeze and in a 20-mile wind reaches top output of from 20 to 35 amperes according to the varying ground resistances. At 20 miles per hour or 850 revolutions per minute of the propeller, the patented Albers centrifugal airbrake automatically checks the speed to

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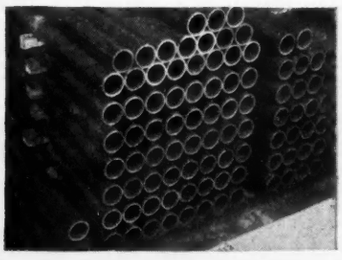
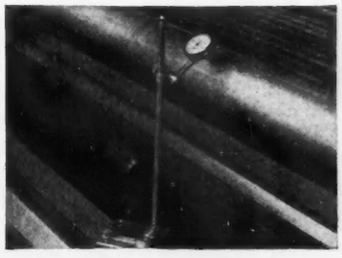
STARTING LIFE for A LINER'S "OVERCOAT," the PUMP JACKET

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

To the average user of deep well plunger pumps the jacket is merely a piece of tubing that holds a series of liners. To Axelson, however, pump jackets are important—so important that they are constructed of cold rolled material—requiring twenty-four manufacturing and inspection operations between the raw stock and finished jackets. ¶ After every manufacturing operation on any Axelson product a check is made by the machine operator to verify accuracy. These inspections are then further checked by regular shop inspectors. ¶ This care and attention to every detail of pump fabrication is one of the reasons why Axelson pumps have a world-wide reputation for long life and economical production.

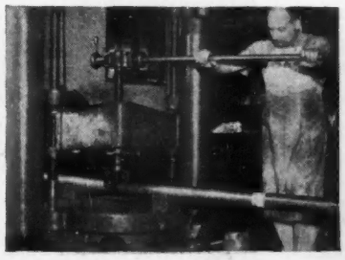


1. Special cold rolled steel tubing of various sizes for Axelson jackets is stored in the tubing warehouse.



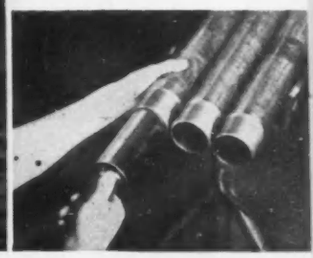
3. Axelson jacket material must meet definite specifications for straightness. This is checked with dial indicators.

2. All tubing is rolled to definite specifications and is carefully inspected immediately upon arrival.



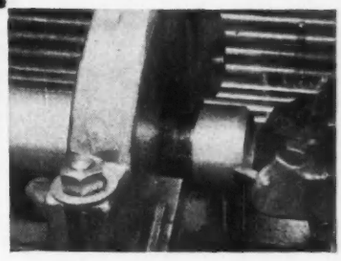
4. Where misalignment is disclosed the tubing is straightened to conform to exact tolerances allowed.

8. As an added precaution, threads are again checked by an inspector after the lathe operator's check.

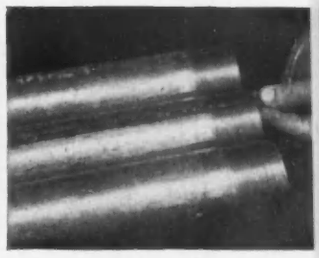


9. Next, a plug gage is passed through the entire length of each jacket, checking roundness and size of bore.

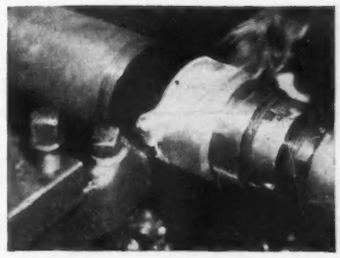
13. Finished jackets are carefully stored in Axelson stock rooms, for shipment or to be made up as complete pumps.



5. After straightness has been verified, jacket material is placed in Axelson lathes where ends are chamfered.



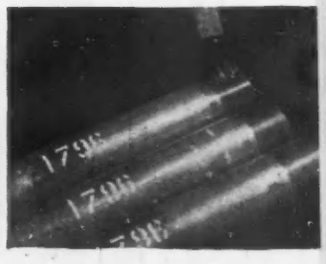
10. Inspectors verify that every Axelson jacket has been previously cut and finished to correct lengths and tolerances.



6. After chamfering the jacket ends, they are lathe turned to the proper size preparatory to threading.

11. After all manufacturing and inspection operations, each jacket is painted and stenciled with its part number.

7. Axelson chasers chase the thread on both ends of jacket. Threads are gaged before removing from machine.



12. After painting and stenciling, threaded ends of each jacket are coated with a special rust-preventive solution.

AXELSON

DEEP WELL PLUNGER PUMPS

SUCKER RODS

Axelson Manufacturing Company, P. O. Box 98, Vernon Station, Los Angeles • St. Louis • 50 Church Street, New York • Tulsa

Mid-Continent and Eastern Distributor: Frick-Reid Supply Corporation • *Rocky Mountain Distributor:* Great Northern Tool & Supply Company.

Wincharger Generator

maintain a constant charging rate regardless of increased wind velocities.

Electric current is collected from the generator by means of double brush collector ring utilizing two carbon brushes. The unit turns with the wind on a ball bearing turn table, is easily shut off by means of a positive acting auto-type brake. Generator has grease sealed ball bearings that require no oil during life of unit. Unit is mounted on 5½-foot stub tower. This stub tower fits a special sectional steel tower for installations of heights from 25 to 105 feet. The unit also may be mounted on self-supporting or windmill tower.

The standard Wincharger Cathodic Protection unit is designed to cover a range of ground resistance from .1 ohm to 1 ohm. The top output at 20 miles per hour wind velocity is indicated below for three typical points in this resistance range.

.16 ohm.....35 amperes
.4 ohm.....30 amperes
1.3 ohm.....25 amperes

Somewhat better performances can be obtained at given point for a specific resistance by winding the generator unit specifically for the known ground resistance. Such units are available on special order.

When resistances encountered are above 1 ohm, special winding for the known ground resistance is recommended. When ground resistance rises to approximately 3 ohms, top output is cut to approximately 20 amps. The standard unit is wound so that some current flows through the circuit as soon as propeller starts turning or at wind velocity of approximately 3 miles per hour. Measurable currents are not usually obtained until wind velocity reaches 4 or 5 miles per hour. Some protection is furnished, however, as soon as propeller starts turning.

The unit can be equipped with weather-proof control box with precision volt and ammeters and necessary terminals. All units are protected by thermal relay against excessive current which might result from changes in the ground resistance or continued running in extremely high winds. These thermal units open at 150°F., and by the insertion of resistance in the field cut the current to safe values.

AUTOMATIC COMPOUND SUCTION VALVE

American Iron & Machine Works Company

A new Automatic Compound Suction Valve, designed to compound slush pumps for drilling wells by rotary method, is announced by American Iron & Machine Works Company of Oklahoma City. The valve is essential where blowouts are encountered in drilling wells and where blowouts would have to be mudded off by creating compound pressures of both pumps. It is also very practical in pumping down cement or other substances where it requires extreme pump pressure. The valve is made of the best grade of steel and with a safety factor in excess of actual requirements.

EXTRACTOR

Reps Tool Inc.

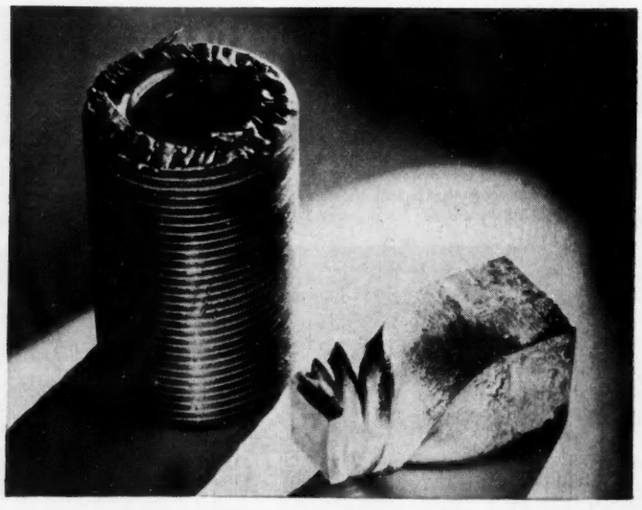
Reps Tool Inc., 220 Delaware Ave., Buffalo, N. Y., announces the Reps Extractor for extracting broken pipe and studs.

The patented four-point grip prevents Reps Extractor from reaming and assures strong bite without hammering or pounding. Shallow grip greatly lessens any expansion and jamming.

Built-in reamer automatically removes burrs from pipe, eliminating interference with Extractor's bite and minimizing cause for expansion of broken piece. The Reps Extractor pulls rather than reams.

Compact one-piece design makes the Reps Extractor strong, durable and easy to handle. Heat-treated forged steel with a Brinell hardness of 490 gives a toughness harder than any material with which the Extractor will come in contact, such as iron, steel, bronze, brass or special alloys. Electrolytically plated cadmium provides permanent rust-proof surface. The extractors release instantly from bite after job is completed.

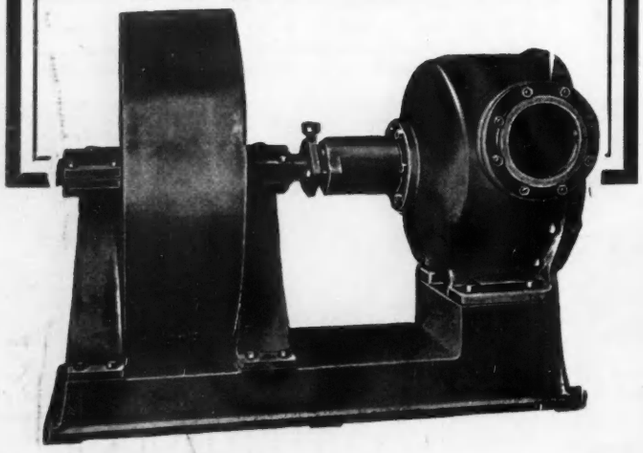
Broken pieces of pipe are removed by inserting the Reps



Reps Extractor.

The **VIKING**

General Purpose Rotary Gear Type Pump



Capacity: 1,050 gallons per minute.
Standard 8-inch belt driven.

Distributed by

Southern Engine & Pump Company
HOUSTON, DALLAS AND KILGORE, TEXAS

Extractor straight into the pipe so all four points bite at the same time. Turn the extractor with a wrench in the direction of the extractor's threads. To remove studs, screws or bolts, drill a hole in the exact center of broken part just deep enough for the Reps Extractor to get its shallow grip.

The complete set of only 10 Reps Extractors fits every size and class of pipe, standard, heavy or extra heavy, from ⅛-inch to 2-inch. This same set of tools fits every size of studs, screws and bolts from 7/16-inch to 3½-inch.

ALLOY SHOVEL

The Wood Shovel and Tool Company

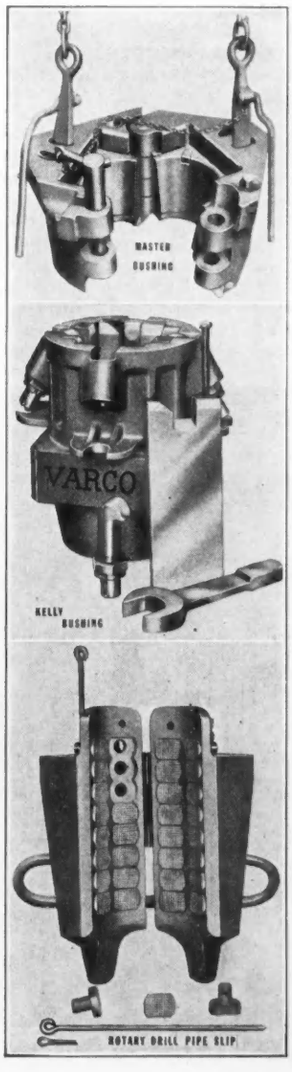
The Wood Shovel and Tool Company, Piqua, Ohio, has developed a new type of shovel, extremely light in weight and particularly safe in hazardous occupations. Because the blades are of specially-treated aluminum alloy, the shovels are not only light in weight, but rust-proof, acid-resisting and non-sparking.

The lightness of the aluminum cuts the shovel weight in half, eliminating from 3 to 5 pounds of "dead" weight or 2 or 3 tons during a continuous day's work. These new type shovels come in 7 different models, and in various sizes to suit special requirements.

DEEP DRILLING EQUIPMENT

Abegg & Reinhold Company

Abegg & Reinhold Company, Ltd., 2533 East 26th Street, Los Angeles, has completely redesigned three units in its line of equipment. These new units are built to meet the demand for modern deep well drilling. They are constructed of heat-treated alloy steels of high physical properties which meet conditions with reserve strength to resist destruction and overcome wear.



The new Master Bushing eliminates any need for building-up to compensate for wear and with different size bowl inserts the rotary slips can be extremely light in weight. This new master bushing is rigid and will add life to drill pipe by preventing crushing and slip cutting, as well as prolong the life of the rotary slips.

The new Varco Kelly Bushing is one solid piece of heat-treated alloy steel capable of handling any undue stress and at the same time allowing free movement of the Kelly at all times. It houses inserts for both square and octagonal Kellys from 2½ to 6-inch inclusive; larger Kellys requiring larger bushings. Four powerful steel bolts of special design hold the inserts in place, which in turn force the liners into positive position, the pressure being taken over a large area. Within the bushing is a slight curvature which is a decided aid in aligning the inserts. These bushings last indefinitely, the inserts are replaceable and can be used from the same "pot" or bushing.

The new two-man lightweight rotary slip has as a basic feature inserts which are movably fastened, made of heat treated, chrome-nickel steel. The unit is light in weight, the body also being of alloy cast steel. The movably fastened inserts give an even grip over the entire circumference, all teeth being engaged. These inserts automatically adjust themselves and their replacement cost is very low.

These improved wrenches offer a sensational value. They are approximately twice as strong as old-fashioned wrenches of this type . . . average 93% as strong as alloy steel wrenches of similar size and are *actually stronger* than the Double Head Engineers' Pattern Alloy Wrenches of popular thin design. Made in a complete standard line; 50 patterns, more than 1000 sizes. The new booklet, mentioned below, describes Williams' "Superior" Wrenches.

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INTERNATIONAL PETROLEUM EXPOSITION
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Every mechanic and tool buyer needs this helpful, informative booklet. Complete tables give correct wrench opening for U.S., S.A.E., American Standard Nut and Cap Screw sizes. Data on wrench types and applications, how to select the proper wrench for your needs. Write your name and address in margin below, tear off base of ad and mail.

J. H. WILLIAMS & CO.
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OW-4

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

This Week with the Industry's EQUIPMENT SUPPLIERS

Directors Elected at Annual Meeting of Johns-Manville

At the annual meeting of stockholders of Johns-Manville Corporation held March 25, directors elected for the ensuing year included: Walter H. Aldridge, Francis D. Bartow, Lewis H. Brown, H. Edward Manville, William R. Seigle, Enders M. Voorhees, George Whitney and E. T. Stannard.

Alfred P. Sloan, Jr., who had served for nine years as a Johns-Manville director, and Clarence M. Woolley, who had been a director for the past eight years, requested that their names not be submitted to the stockholders for re-election because of the pressure of other duties.

E. T. Stannard, who replaces Sloan as a J-M director, is president and a director of Kennecott Copper Corporation. He graduated from Sheffield Scientific School, Yale University, in 1905.

It was announced that the place on the board left vacant by Woolley will be filled at some later meeting of the company's directors.

Lane-Wells Company Buys M. J. Lewis Oil Well Service

Effective as of March 15, the purchase of M. J. Lewis Oil Well Service Company of Houston, Texas, has been announced by Walter Wells, president of Lane-Wells Company. The M. J. Lewis organization has been connected for years past with the development and perfection of directional drilling appliances in the Mid-Continent and Gulf Coast areas.

According to Wells, purchase included Lewis Knuckle Joint, and all tools, subs, reamers and accessory equipment, as well as field trucks and automobiles. The personnel of seven trained field crews will be continued and augmented as conditions warrant. In speaking of the purchase, Wells said, "We feel that the acquisition of the Lewis organization, together with the products which they have established in the field, strengthens our oil well survey division materially. We are now in a position to offer not only magnetic single-shot, inclinometer, and orienting surveys, but also directional drilling as well."

For the time being, all manufacturing will be carried on in Lane-Wells Company's main plant in Los Angeles. Service and repair plants will be maintained throughout the field to meet conditions as they arise. Lane-Wells Company's headquarters in Texas are at 2002 Wayside Drive, Houston; in the Mid-Continent, at 2 Northwest Tenth Street, Oklahoma City.

New Jarecki Supply Store At Electra, Texas

Jarecki Manufacturing Company has recently opened a new supply store at Electra, Texas, with Jack Cargile as manager and Paul Carpenter salesman.

The new store carries in stock a comprehensive line of oil field supplies, including the Jarecki-manufactured line of valves, pipe fittings and oil field specialties.

Jarecki now operates 34 supply stores, which are strategically located in the Mid-Continent, Northern and Eastern fields. The company has its home office and factory at Erie, Pa., and general offices at St. Louis, Mo.

Jones & Laughlin Steel Corp. Readjusts Selling Organization

The appointment of three assistant general managers of sales, the opening of a new district sales office in Baltimore, together with several promotions and new appointments in the corporation's district sales offices, effective April 1, were announced by Lewis M. Parsons, vice president and general manager of sales of Jones & Laughlin Steel Corporation, Pittsburgh.

The three assistant general managers of sales are R. T. Rowles, W. H. Wiewel, and H. J. Watt; the two former having general supervision over products sales departments and the latter over Eastern district sales offices.

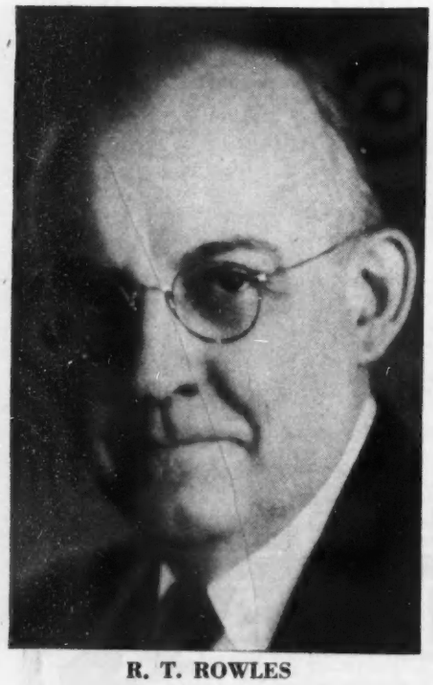
Rowles will supervise the general activities of the hot rolled, cold finished, wire products, and warehouse sales departments. Rowles started with J & L in 1912. In 1925 he was appointed manager of hot rolled sales.

Wiewel will supervise the general activities of by-products and pig iron, sheets and strip, tinplate, and tubular products sales departments. He came to J & L in 1935 as manager of sales of tubular products. He entered the steel business in 1910 with Cambria Steel Company.

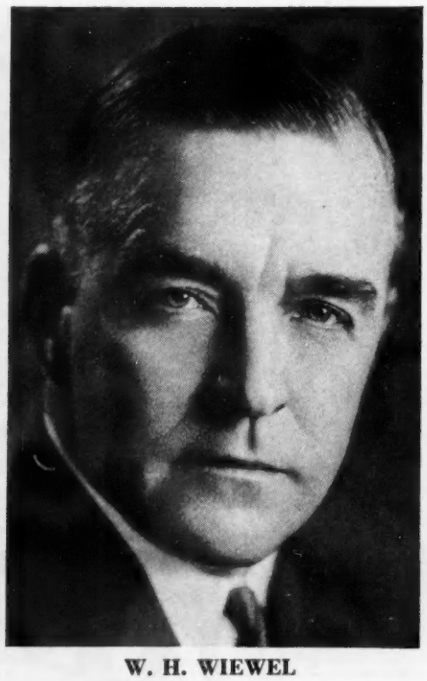
Watt will have charge of New York City and the East, with general supervision over district sales offices in Boston, New York, Philadelphia, Atlanta and the new district sales office in Baltimore. Watt has been district sales manager in New York since 1935. He entered the steel business in 1912 in the Philadelphia office of Carnegie Steel Company and came to Jones & Laughlin in 1925.

Arthur A. Wagner, assistant manager of hot rolled sales, becomes manager of hot rolled sales, succeeding Rowles.

John O'H. Anderson, assistant district sales manager in New York City, becomes manager of sales, tubular products, succeeding Wiewel. E. J. Dickson becomes assistant manager of



R. T. ROWLES



W. H. WIEWEL

H. J. WATT

Three Assistant Managers of Sales for Jones & Laughlin Steel Corporation

L. R. "BOB" BURNS
With Fluid Packed Pump at Freer.

sales, tubular products, in Pittsburgh.

The new district sales office in Baltimore will be in charge of V. A. Jevon, as district sales manager, and H. R. Dorney, as assistant district sales manager, the latter being promoted from the Philadelphia office.

Jevon is a new man in the Jones & Laughlin organization, coming from the Baltimore office of Bethlehem Steel Company where he has been assistant manager of sales since 1933.

John B. DeWolf is appointed district sales manager in Philadelphia, succeeding Thomas C. Ham, who is transferred to Pittsburgh to supervise the corporation's industrial training plan. Herbert B. Spackman is made assistant district sales manager at Philadelphia. Both DeWolf and Spackman are new comers in the Jones & Laughlin organization.

DeWolf leaves Republic Steel Corporation as assistant manager of tinplate sales at Cleveland to come with Jones & Laughlin. He entered the steel business in 1912 with Liberty Steel Company, subsequently merged into Republic.

Spackman has been with Bethlehem Steel Company since 1923 in the sales departments at Buffalo and Philadelphia.

Edward H. Hughes is made district sales manager at St. Louis, succeeding J. B. Hungate, who resigned. Hughes entered the steel business in 1912 with American Bridge Company and in 1916 started with J & L in the Chicago warehouse. In 1934 he became assistant manager of sales, steel construction, at Pittsburgh.

Two new assistant district sales managers have been appointed in New York, under Watt; William K. Breeze, transferred from the Cincinnati office and Hughart R. Laughlin, at present in the New York office, formerly in the tubular sales department in Pittsburgh.

F. B. Kittredge has been promoted from the Philadelphia office to assistant district sales manager at Boston under Samuel A. Fuller, district sales manager.

Charles M. Mason has been promoted from the Cleveland office to assistant district sales manager at Buffalo, under Charles F. Gold, district manager of sales.

Fluid Packed Pump Opens Freer Store

Fluid Packed Pump Company recently has opened a new store at Freer, Texas, for the purpose of servicing the Laredo district with its products. L. R. "Bob" Burns is manager of the store, and is assisted by Charles P. McCoy. The Freer store is under the supervision of Robert J. Miller of the Houston office. The company also carries stock at Mirando City in the Laredo district.

National Supply to Send Alleman to Venezuela

L. J. Alleman, Houston, sales engineer for National Supply Company in the Gulf Coast district, has been made manager for that company in Maracaibo, Venezuela.

The Bovaird Supply Company Opens K-M-A Supply Store

The Bovaird Supply Company announces the opening on April 1 of a new store, located at Kadane Corner, in the K-M-A field.

James P. Tune will be manager of the Kadane store and Fletcher V. Strong will be assistant manager. Tune was formerly field salesman at the company's Oklahoma City store and Strong field salesman out of its Ada store.

Bovaird's store at Kadane Corner may be reached by telephone through Kemp City, Texas—Telephone Number 50; and by mail to Rural Route Number 1, Electra, Texas.

JAMES P. TUNE
Bovaird Manager at K-M-A.

The Continental Supply Company Opens Store at Seagraves

The Continental Supply Company has announced a new store to be opened immediately at Seagraves, Texas, under the managership of James C. Hill.

This is another Continental outlet serving West Texas.

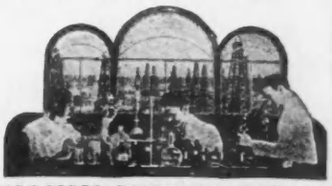
Don C. Davis Now With Arrow Supply Company

Don C. Davis, Tulsa division sales manager of Emsco Derrick & Equipment Company, resigned April 1 to join

Standco
NO-SMOKE
STANDCO BRAKE LINING
Nothing novel—no bunk—but it gets the job done without scoring brake rims. See page 1940, Composite Catalog.
STANDARD BRAKE LINING CO.

YOU DRILL . . . WE'LL FURNISH the MACHINERY and DRILL PIPE . . .
All thoroughly reconditioned in our own shop . . . for SALE or RENTALS. Call or wire for prices.
NEAL LUCEY COMPANY
2107 QUITMAN ST.-PRESTON 9614
HOUSTON, TEXAS

GEOPHYSICAL SOIL SURVEYS
Many major concerns are now using this company's GEOPHYSICAL SERVICE for locating oil.
Although we sometimes make mistakes, yet actual records show that . . .
Structural accelerations can be accurately recorded 5 out of 6 times, and Oil, possibly 6 out of 10 times . . . . . BY CHEMICAL ANALYSIS OF SURFACE SOILS.



GEOLOGICAL SCIENTIFIC SERVICE CO.
PETROLEUM BLDG.
FT. WORTH TEXAS
For further information Write or Phone 2-9888 collect. Our Representative will call on you personally to answer any questions regarding the service of this company.

the sales staff of the Arrow Supply Company, Fort Worth.

Arrow Supply Company announces the removal of its store from the Monument area to the Vacuum field, Lea County, New Mexico, where the largest drilling campaign in the state is getting under way. T. J. Pickett, former manager of the company's store at Pearsall, Texas, has been placed in charge of the Vacuum unit.

Houston Office of Mine Safety Appliance Moved

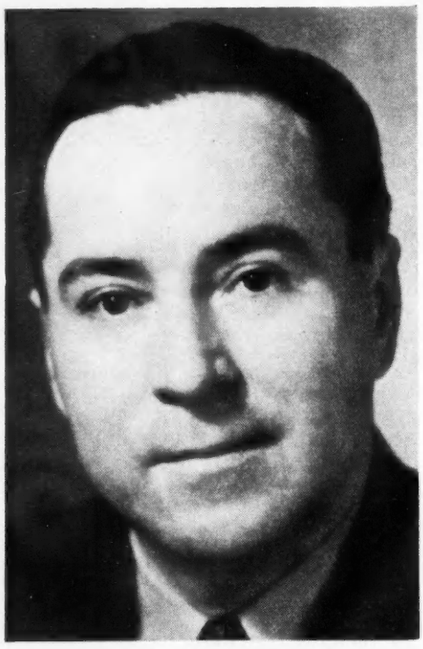
Mine Safety Appliances Company, Pittsburgh, recently announced the removal of its Houston, Texas, office from 2018 Capitol Avenue to 1718 Louisiana Street. George J. Gruber remains in charge of the branch.

Lufkin Foundry & Machine Company Completes Expansion

Lufkin Foundry & Machine Company, Lufkin, Texas, announces completion of a two-year expansion program which increases the production of its plant more than 125 percent. This company, organized in 1900, pioneered reduction gear oil well pumping and has attained world-wide distribution of its product.

The expansion program included new buildings and particularly new tools, the plant being practically 100 percent retooled with the very latest and most modern precision production machines. It is said this plant has the largest and most modern gear cutting department in the world.

Reduction gear units, principal product of the Lufkin Foundry & Machine Company, met with acceptance from its introduction almost 15 years ago.



C. P. WILLIAMS

Houston branch manager for L. H. Gilmer Company.

Many patents covering oil field appliances, such as the Lufkin-Trout Counterbalance Crank, are controlled by W. C. Trout, president of the company.

Offices and warehouses are maintained in principal oil fields throughout the United States. Export offices are located in New York.

L. H. Gilmer Company Opens Branch at Houston

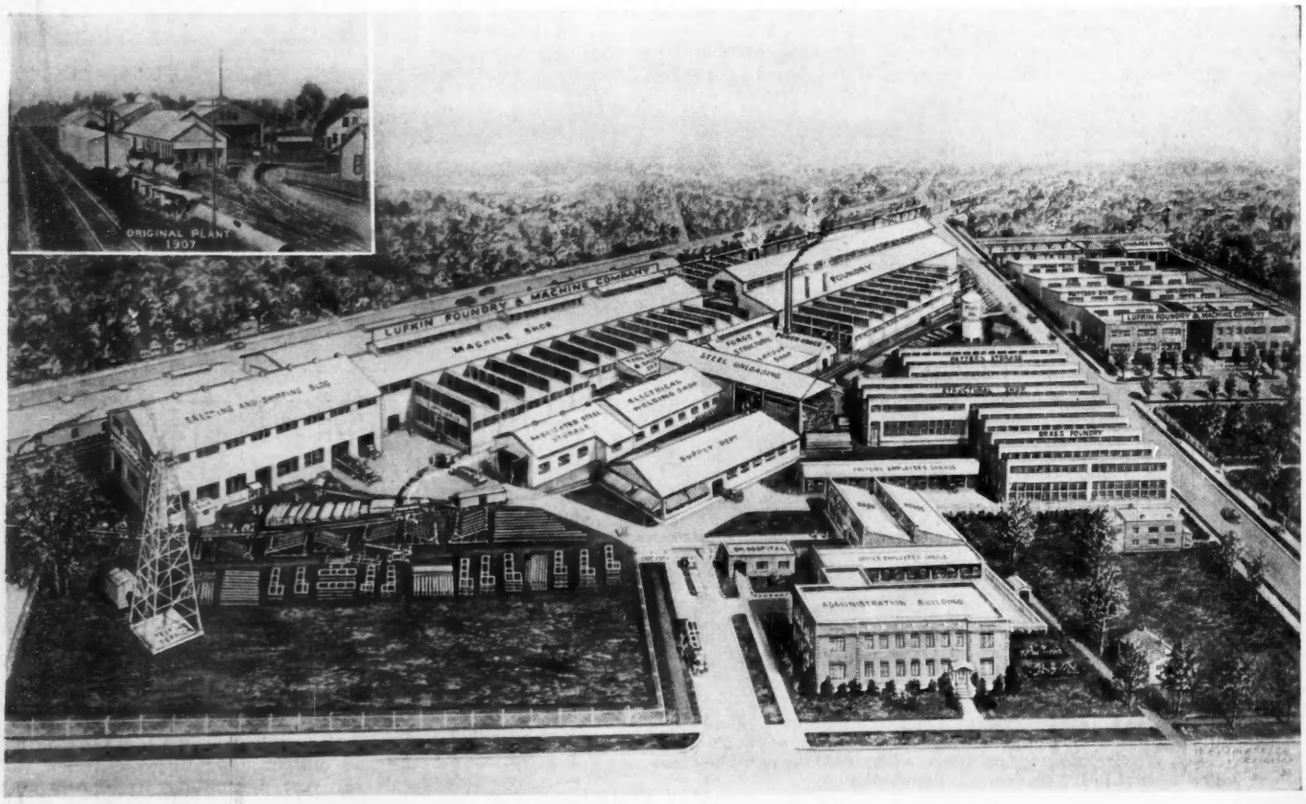
L. H. Gilmer Company, Tacony, Philadelphia, has opened a new branch office at 1015 North San Jacinto Street, Houston. A complete stock of V-belts and V-belt sheaves has been installed.

C. P. Williams, who has been connected with the company for five years, is in charge of the new branch.

Strouse Gets New Post With Harnischfeger Corporation

The Harnischfeger Corporation of Milwaukee announces the recent appointment of H. S. Strouse as vice president of the corporation. Along with the duties of his new position, he will continue to direct the activities of the treasurer's department.

In taking over his new post, Mr. Strouse reaches a new high point in his 23 years of business activity which began in 1915 when he graduated from the school of Electrical Engineering at Purdue University. After graduation, he entered the Chicago Central Station Institute for approximately a year, following which he was employed by the Interstate Public Service Company at Newcastle, Indiana, as new business manager. At the outbreak of the war he entered the first officers' training camp at Fort Benjamin Harrison, Indianapolis, and, after active service overseas, with the 310th Regiment of Engineers, was mustered out in 1919. He then entered the employ of Western Electric Company at Chicago as designer in the automatic telephone section. Shortly after this he went to Harnischfeger Corporation as estimating engineer. In 1921 he was appointed advertising manager, and in 1931 was elected treasurer. Two years later he became a director.



Lufkin Foundry & Machine Company's plant in Lufkin, Texas.

Squeaks from the Bull Wheel

Makes It Clear

An Englishman was explaining to an American friend the disadvantage of the American telephone salute as compared with the British. "In America you say 'hello,' and the person you are speaking to says 'hello,' and that doesn't give you any information. In England you say, 'Are you there?' and the person at the other end of the line says 'yes' or 'no' as the case may be."

His Alibi

An Italian having applied for citizenship, was being examined in the naturalization court.

"Who is the President of the United States?"

"Mr. Rosfelt."

"Who is the Vice President?"

"Mr. Garter."

"If the President should go away, who then would act as President?"

"Mr. Garter."

"Could you be President?"

"No."

"Why?"

"Mister, you 'scuse, please, I vera busy—warka da mine."

Undisturbed

The vacuum cleaner salesman who had an appointment found the lady of the house unable to keep it. He suggested tomorrow.

"That's my busy day," she said. "If you call then, you will find me in a whirligig."

"That won't worry me, madam," he said, "my last customer was in a kimono."

You Know the Kind

"We'd appreciate a statement about what you thought of our all-expense tour you took last summer?"

"Hmmm—it was well named!"

Not Unmarried

"Are you unmarried?" inquired the census-taker.

"Oh, dear, no," answered the lady, blushing to the roots of her hair. "I've never even been married!"

Bad Case of Perjury

Pat was arrested for being intoxicated. On being brought before the judge, he was asked by the court what he was there for.

Your Honor, I was arrested for being intoxicated.

Pat, where did you buy the liquor?

Your Honor, I did not buy it. A Scotchman gave it to me.

Thirty days for perjury.

After Thought

"The best thing for you is to stop drinking and smoking, go to bed early, and get up early in the morning."

"Say, Doc, I don't think I'm worthy of the best; what's second choice?"

Page the Double!

The hotel was on fire. On a sixth-story ledge stood a great film actress, flames crackling about her. Below the firemen were holding the net while the crowd waited in agonized suspense. Finally a strained voice screamed:

"JUMP, lady—for heaven's sake!"

The great movie actress folded her arms in calm disdain.

"I'll do nothing of the sort," she answered. "Tell the director to send my double here this instant."

Smith Is Happy

"How's things with you, Smith?"

"I'm doing a lot better. In this recession I'm dancing the big apple, while in the depression I was selling them."

Still Unregenerate

Although late March, the day of the baptism at Miller's dam was cold and the preacher had to break the ice for the ceremony.

"Is the water cold, John?" asked a deacon of one of the new members stepping ashore after his immersion.

"No, not a bit cold," replied John.

"Better put him under again, Parson," advised the deacon. "He hasn't quit lying yet."

Optimistic

"Looking over the spring styles I noticed that the designers seem optimistic."

"What do you mean?"

"They're still making men's suits with pockets."

A Touch

Two Broadwayites sat in a restaurant. At the end of the meal, one requested a loan.

"Can I borrow 20 bucks for a week?" he asked.

"Sure," replied the other, counting out the money.

As they arose, the latter man spoke again.

"Remember," he reminded, "that's only for a week."

"You'll get your money," he screamed. "Stop hounding me!"

Wrong Man

Can you do the work?

Work! Why, I thought you wanted a foreman.

Army Life Tougher Then

Someone digging around War Department records in Washington recently discovered the following orders issued to troops at Fort Riley, dated October 25, 1842:

"Members of this command will, when shooting at buffaloes on the parade ground, be careful not to fire in the direction of the C. O.'s quarters.

"The troop officer having the best trained regiment for this year will be awarded one barrel of rye whisky.

"Student officers will discontinue the practice of roping and riding buffaloes.

"Attention of all officers is called to Par 107-AR in which it provides under uniform regulations that all officers will wear beards."

Harold Is Behind

I suppose they ask a lot for the rent of this sumptuous apartment.

Yes, they asked Harold seven times last month.

It's no mystery

WHY THE

MILLER SAND PUMP

increases **PRODUCTION**

The sand and sediment that decreases production, the MILLER cleans out quicker, at less cost—that's why the MILLER Sand Pump is in world-wide use today!

The MILLER is made in diameters of 2½, 3, 3½, 4, 4¼, 5, 5½, 7 and 9 inches and lengths of 20, 25 and 30 feet. 5/32-inch wall thickness in REGULAR Type, ¼-inch wall tubes HEAVY Type Sand Pumps.

INTERCHANGEABLE BOTTOMS

To Meet Every Condition

- **BAILER BOTTOM** — With the Bailer Bottom installed the MILLER is quickly changed to a Bailer giving you a combination of either Bailer or a Sand Pump in one tool.
- **SAND BOTTOM** — Used when tools are run and when well is shot to quickly remove loose material.
- **STAR BOTTOM** — Used for cutting the sand loose.
- **CHISEL BOTTOM** (In Pump) — With this bottom tightly packed sand can be easily broken in small pieces so it can be picked up in the pump.

Write for Descriptive Folder and Price List

See Page 1186 COMPOSITE CATALOG

PATENTED
NO. 1370340
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